



# **THE GAYLORD VENTILATOR TECHNICAL MANUAL**

**FOR THE “CG” & “RG” SERIES  
WATER-WASH VENTILATORS  
WITH  
MODEL C-5000 COMMAND CENTER**

## **GAYLORD INDUSTRIES**

AN ILLINOIS TOOL WORKS COMPANY

10900 S.W. AVERY STREET • TUALATIN, OREGON 97062 U.S.A.  
1-800-547-9696 • 503-691-2010 • FAX: 503-692-6048 • email: [info@gaylordusa.com](mailto:info@gaylordusa.com)



## GAYLORD INDUSTRIES

10900 S.W. AVERY STREET • TUALATIN, OREGON 97062 U.S.A.  
1-800-547-9696 • 503-691-2010 • FAX: 503-692-6048

To Our Customers. . .

Congratulations on your recent purchase of a Gaylord Ventilator. We are proud to be able to provide you with a quality product that incorporates the latest engineering concepts and is a result of over 50 years of experience in the foodservice kitchen exhaust industry.

If you have other Gaylord equipment such as a Gaylord Heat Reclaim Unit, Quencher Fire Protection System, or Roof Top Air Handling Equipment, etc., please refer to the corresponding supplementary equipment manuals.

If you have further questions, please call us toll free at 1-800-547-9696. We are more than happy to help.

Sincerely,

Edson C. Gaylord  
President/CEO



COMMERCIAL KITCHEN EXHAUST SYSTEMS • FIRE PROTECTION • HEAT RECLAIM • UTILITY DISTRIBUTION • ROOF TOP UNITS • POLLUTION CONTROL

## TABLE OF CONTENTS

"CG" SERIES PRINCIPLE OF OPERATION .....	3-5
"RG" SERIES PRINCIPLE OF OPERATION .....	6-8
INTERNAL FIRE PROTECTION .....	7-8
DAILY OPERATION .....	9
PREVENTIVE MAINTENANCE .....	10
DETERGENT PUMP OPERATION .....	11
DETERGENT FOR THE WASH SYSTEM .....	12
MODEL C-5000 SERIES COMMAND CENTER - INSTRUCTIONS .....	13-15
ENGINEERING DATA .....	16-17
TROUBLE-SHOOTING:	
EXHAUST .....	18
GREASE EXTRACTION .....	18
EXHAUST FAN .....	18
C-5000 COMMAND CENTER .....	19
FIRE CYCLE .....	19
WASH SYSTEM .....	19
BACKFLOW PREVENTOR .....	20
VACUUM BREAKER .....	20
RP DEVICE .....	20
DRAINS .....	21
C-5000 STATUS LIGHT CHART .....	21
MEASURING INLET SLOT VELOCITY .....	22-24
OPTIONAL CONTINUOUS COLD WATER MIST .....	25
PARTS LISTS:	
MODEL GPC-5000 SERIES CONTROL CABINET .....	26
MODEL GPC-5000-RP SERIES CONTROL CABINET .....	27
MODEL GPC-5000-RP-S SERIES CONTROL CABINET .....	28
OPTIONAL CONTINUOUS COLD WATER MIST .....	29
MODEL GPC-5000 SERIES CONTROL .....	30
DAMPER CONTROL SWITCH .....	31
DETERGENT PUMP .....	32
MISCELLANEOUS VENTILATOR PARTS .....	33
WIRING DIAGRAMS .....	34-41
STANDARD VENTILATOR MODELS .....	42
METRIC CONVERSION CHART .....	43
START-UP INSPECTION REPORT .....	44
LIMITED WARRANTY .....	Inside back cover`1

**U.S. PATENT NUMBERS**

3,247,776; 3,611,909; 3,785,124; 3,788,041;  
4,072,143; 4,266,529; 4,281,635; 4,356,870  
Other U.S. Patent applications pending.  
U.S. Trademark Registration 800,820.

**AUSTRALIA PATENT NUMBERS**

481,510; 465,037

**BRAZIL PATENT APPLICATION PENDING**

**CANADA PATENT NUMBERS**

744,166; 759,710; 926,689; 940,761;  
1,004,155; 1,086,126; 1,139,151; 968,559  
Canada Patent application pending.

**FRANCE PATENT NUMBERS**

7,227,217; 7,332,718; 2,351,362  
France Patent applications pending.  
France Trademark: 740,296

**GERMANY PATENT NUMBERS**

2,346,196; 1,604,173; 3,152,501  
German Patent application pending.

**GREAT BRITAIN PATENT NUMBERS**

1,350,857; 1,396,065; 1,558,537

**JAPAN PATENT NUMBERS**

650,269; 797,637; 917,077; 1,045,507;  
726,884; 1,580,556  
Japan Patent application pending.  
Japan Trademark registration 874,453

**NEW ZEALAND PATENT NUMBERS**

162,024; 167,964  
New Zealand Trademark #B 95557

**SWEDEN TRADEMARK**

120,229

**SWITZERLAND PATENT NUMBERS**

560,358

© Copyright 2005, Gaylord Industries

ALL RIGHT RESERVED. NO PART OF THIS BOOK MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM, OR TRANSMITTED IN ANY FORM BY AN ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING MEANS OR OTHERWISE WITHOUT THE WRITTEN PERMISSION OF GAYLORD INTERNATIONAL COPYRIGHT 2005.

The manufacturer reserves the right to modify the materials and specifications resulting from a continuing program of product improvement or the availability of new materials.

Additional Copies \$15.00



## GREASE EXTRACTION

The Gaylord "CG" Series Ventilator extracts up to 95% of the grease, dust and lint particles from the airstream passing through it, when operated and maintained in accordance with design specifications.

The hot, contaminant-laden air rising from the cooking surface merges with the higher velocity air that wipes the front of the cooking equipment and extends, like an air blanket, from the front edge of the cooking equipment to the air inlet of the ventilator. As the air moves through the ventilator at a high speed, it is forced to make a series of turns around four baffles. As the high velocity air turns around each baffle, the heavier-than-air particles of grease, dust and lint are thrown out of the airstream by centrifugal force. The extracted grease, dust and lint are collected in the interior of the ventilator, remaining out of the airstream until removed daily by the wash cycle.

### Baffle #1

This baffle, located at the air entrance of the ventilator, is of airplane wing type construction, and in its normally open position, acts as the primary extracting baffle. (Refer to Figure 1) This baffle is hinged at each end and, in case of fire, is automatically closed by thermostatic action. There is a small sloped grease collecting gutter on the back side of the damper which drains off liquefied grease, preventing it from re-entraining into the airstream.

### Baffle #2

This baffle is located on the interior back wall of the ventilator and is a stainless steel pipe, equipped with brass spray nozzles on 8" to 10" centers. (Refer to Figure 1) During the wash cycle, hot detergent water is released through the nozzles. If the ventilator's automatic fire control system is activated, fire smothering water spray is also released through the spray nozzles.

### Baffle #3

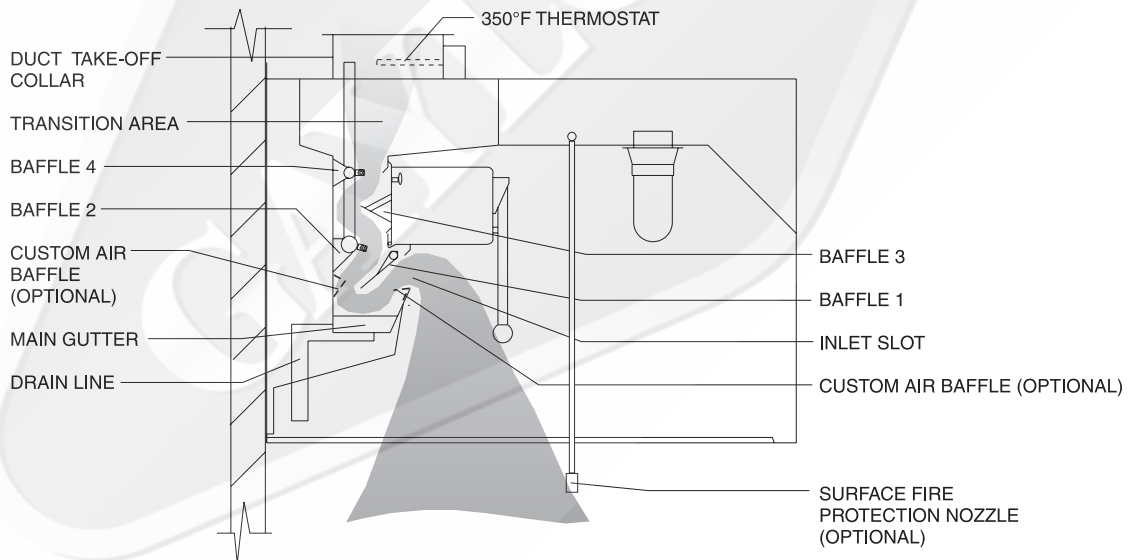
This baffle is located on the back of the inspection doors. This baffle is also a grease collecting gutter, collecting grease, dust and lint extracted by the ventilator - preventing the contaminants from dropping back into the high velocity airstream.

### Baffle #4

This baffle is located on the interior back wall of the ventilator and is a stainless steel pipe equipped with brass spray nozzles on 8" to 10" centers. Baffle #4 is inter-connected with baffle #2, and performs washing and fire protection functions simultaneously with baffle #2.

**NOTE:** Some ventilators may be equipped with optional "Custom Air" baffles (shown dotted) which reduces the exhaust volume where the baffle occurs.

**NOTE:** Some ventilators may be equipped with optional continuous cold water mist. Refer to Page 25 for details.



**FIG. 1**  
**GREASE EXTRACTION**

## "CG" SERIES VENTILATOR PRINCIPLE OF OPERATION

### WASH CYCLE

The wash cycle is activated each time the exhaust fan is shut off by pushing the **"Start Wash"** button on the Command Center or, if equipped with optional time clock ("TC" Series), as programmed on the clock. The **"Wash On"** light is illuminated each time the wash cycle comes on, and hot, detergent injected water is released into the interior of the ventilator for the time set on the wash timer.

This hot detergent water washes the day's grease, dust and lint accumulation from the interior of the ventilator flushing it down to the main gutter which slopes to a pre-flushed drain which leads to the building drain system. Spray nozzles are located on 8" to 10" centers on the two wash pipes (BAFFLES) mounted on the interior back wall of the ventilator. (Refer to Figure 3) At the end of the wash cycle, the water is automatically shut off, and the interior of the ventilator is clean - ready for the next day's operations.

There are three standard wash cycle times that are set depending upon the type of cooking equipment being used.

The settings are 3 minutes for light-duty equipment, 5 minutes for medium-duty equipment, and 9 minutes for heavy-duty equipment. However, adequate cleaning is dependent upon water pressure, water temperature, daily grease accumulation, the length of the wash cycle, frequency of wash cycle and the type of detergent being used. It may be necessary to increase the wash time to the next higher setting to achieve proper cleaning.

COMMAND CENTER  
MODEL C-5000  
SERIES

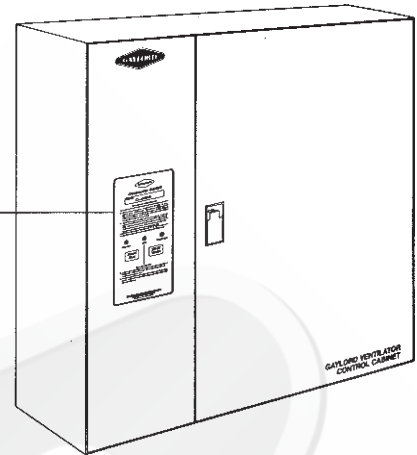


FIG. 2  
VENTILATOR CONTROL CABINET  
MODEL GPC-5000 SERIES

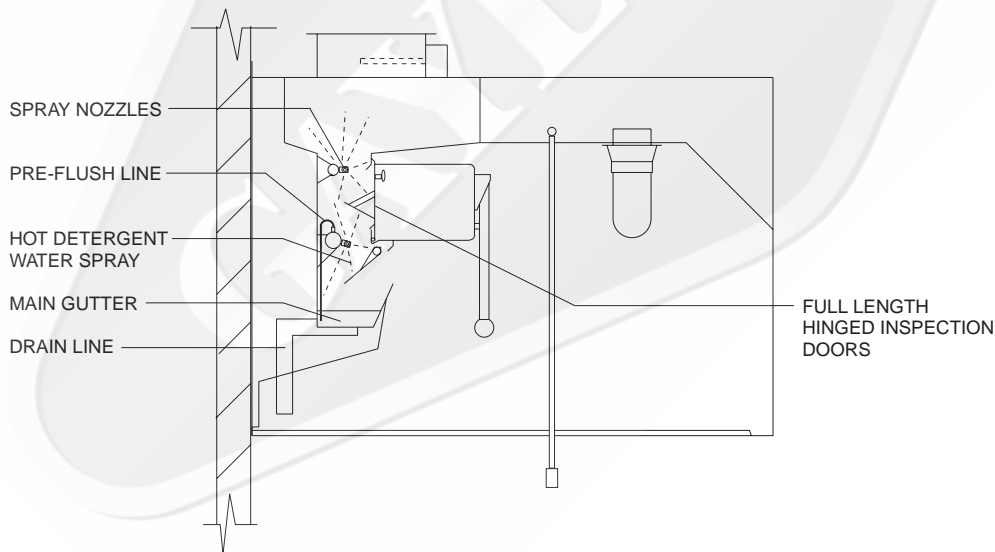


FIG. 3  
WASH CYCLE

# "CG" SERIES VENTILATOR PRINCIPLE OF OPERATION

## INTERNAL FIRE MODE

Automatic internal fire protection is accomplished by the action of the thermostats, which are located at the point where the ductwork joins the ventilator. When the temperature of the conveying airstream, which must pass over the thermostats, reaches 350°F (177°C), the system is activated, and the following occurs:

1. The hinged, grease-extracting fire damper baffle at the air inlet of the ventilator closes — stopping the combustion-supporting, natural draft through the ventilator. (Refer to Figure 6)
2. The exhaust fan serving the ventilator is shut off, stopping the combustion-supporting, mechanically induced draft. The supply fan is also shut off.
3. Fire-smothering water spray is released into the interior of the ventilator through the cleaning system.
4. The **"Fire"** light on the Command Center illuminates.

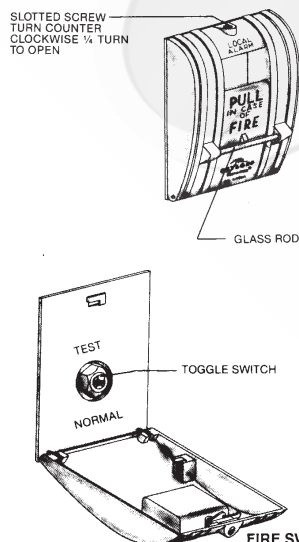
Water will run until the thermostat cools below 350°F (177°C), and then continue for a 5 minute cool down cycle. The water may be shut off prior to the end of the 5 minute cool down cycle by pushing the **"Cancel"** button located inside the electrical compartment of the control cabinet. After the water has shut off, the dampers can be reset by pushing the reset handle on the damper control switch (Refer to Figure 5), and the exhaust fan(s) re-started by pushing the **"Start Fan"** button on the Command Center.

## EXTERNAL FIRE MODE

A break glass fire switch is optional (see Figure 4) and if provided, would normally be located at the exit of the kitchen. Pulling the fire switch shuts off the supply fan and starts the exhaust fan if it was off, releases fire smothering water spray into the interior of the ventilator and the **"Fire"** light on the Command Center flashes. During this time, the fire damper remains open, and the exhaust fan remains on to help remove smoke, heat, etc. If the fire intensified and the thermostat reached 350°F, the fire damper would then close and the exhaust fan would shut off.

To resume normal operations, open the fire switch and flip the toggle switch to the position marked **"normal"**. Replace the glass rod and close the cover.

**FIG. 4  
BREAK GLASS FIRE SWITCH  
C-1357A SERIES**



## TESTING INTERNAL FIRE MODE

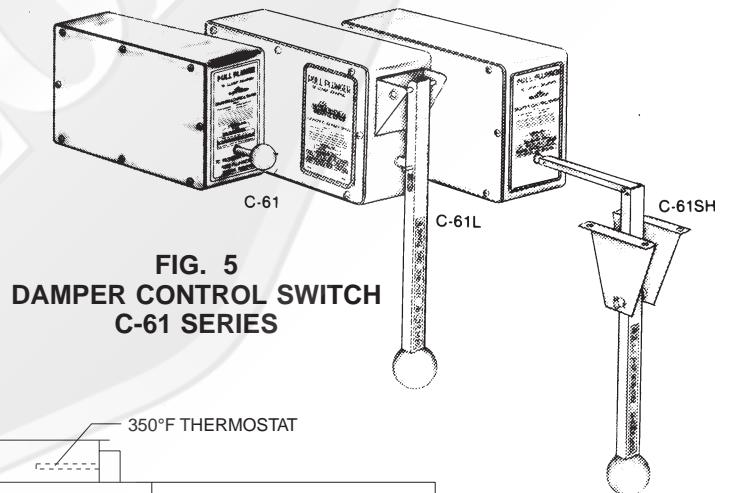
The internal fire protection system may be tested periodically by pushing the **"Fire Test Switch"** which is located inside the electrical compartment of the control cabinet. Pushing this switch duplicates thermostatic action. **CAUTION:** Before pushing the **"Fire Test Switch"**, check to see if the internal fire protection system is tied to the building alarm system.

## TO RESUME NORMAL OPERATION

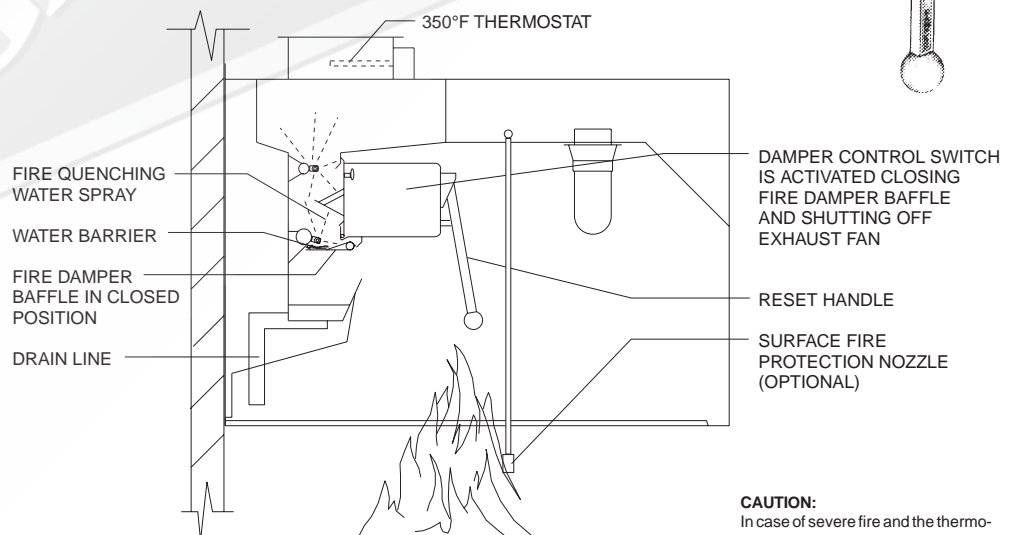
1. To discontinue the 5 minute cool down cycle at any point during the cycle, push the **"Cancel"** button located inside the electrical compartment.
2. Reset all damper control switches.
3. Push the **"Start Fan"** button on the Command Center.

## SURFACE FIRE PROTECTION

The Gaylord Ventilator may be equipped with surface fire protection either dry or wet chemical, or the Gaylord Quencher System. In the event of a fire, the surface fire protection system would normally be activated and discharged prior to the ventilator's internal fire protection. These systems may be intertied with the ventilator control cabinet to activate the External Fire Mode. If the fire is unusually severe or the surface fire protection system malfunctions, the ventilator's internal fire protection system would activate, thus providing a second level of defense.



**FIG. 5  
DAMPER CONTROL SWITCH  
C-61 SERIES**



**FIG. 6  
FIRE CYCLE**

**CAUTION:**  
In case of severe fire and the thermostats located in the duct collar are activated, and as a precautionary measure, it is recommended that the thermostats be replaced.

## "RG" SERIES VENTILATOR PRINCIPLE OF OPERATION

### GREASE EXTRACTION

The Gaylord Royal "RG" Series Ventilator extracts up to 95% of the grease, dust and lint particles from the airstream passing through it, when operated and maintained in accordance with design specifications.

The hot, contaminant-laden air rising from the cooking surface merges with the higher velocity air that wipes the front of the cooking equipment and extends, like an air blanket, from the front edge of the cooking equipment to the air inlet of the ventilator. As the air moves through the ventilator at a high speed, it is forced to make a series of turns around three baffles. As the high velocity air turns around each baffle, the heavier-than-air particles of grease, dust and lint are thrown out of the airstream by centrifugal force. The extracted grease, dust and lint are collected in the interior of the ventilator, remaining out of the airstream until removed daily by the wash cycle.

#### Baffle #1

This baffle is located at the air inlet of the ventilator and is formed as part of the inspection door. There is a small grease collecting gutter on the back side of the baffle which drains off liquefied grease, preventing it from re-entraining into the airstream.

#### Baffle #2

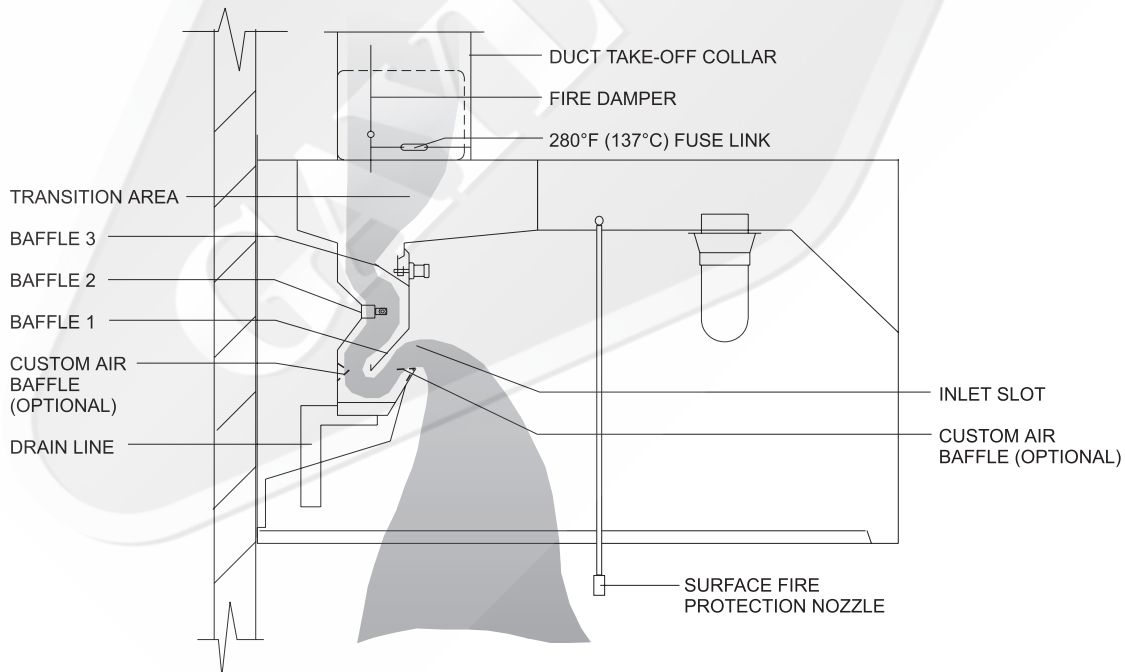
This baffle is on the interior back wall of the ventilator and includes a square stainless steel pipe, equipped with brass spray nozzles on 8" to 10" centers. During the wash cycle, hot detergent water is released through the nozzles. If the ventilator's automatic fire control system is activated, fire smothering water spray is also released through the spray nozzles.

#### Baffle #3

This baffle is located on the back of the inspection door.

**NOTE:** Some ventilators may be equipped with optional "Custom Air" baffles (shown dotted) which reduces the exhaust volume where the baffles occur.

**NOTE:** Some ventilators may be equipped with optional continuous cold water mist. Refer to Page 25 for details.



**FIG. 7**  
**GREASE EXTRACTION**



# "RG" SERIES VENTILATOR PRINCIPLE OF OPERATION

## WASHCYCLE

The wash cycle is activated each time the exhaust fan is shut off by pushing the **"Start Wash"** button on the Command Center or, if equipped with optional time clock ("TC" Series), as programmed on the clock. The **"Wash On"** light is illuminated each time the wash cycle comes on, and hot, detergent injected water is released into the interior of the ventilator for the time set on the wash timer.

This hot detergent water washes the day's grease, dust and lint accumulation from the interior of the ventilator flushing it down to the main gutter which slopes to the pre-flushed drain which leads to the building drain system. Spray nozzles are located on 8" to 10" centers on the wash pipe mounted on the interior back wall of the ventilator. (Refer to Figure 9) At the end of the wash cycle, the water is automatically shut off, and the interior of the ventilator is clean - ready for the next day's operations.

There are three standard wash cycle times that are set depending upon the type of cooking equipment being used.

The settings are 3 minutes for light-duty equipment, 5 minutes for medium-duty equipment, and 9 minutes for heavy-duty equipment. However, adequate cleaning is dependent upon water pressure, water temperature, daily grease accumulation, the length of the wash cycle, frequency of wash cycle and the type of detergent being used. It may be necessary to increase the wash time to the next higher setting to achieve proper cleaning.

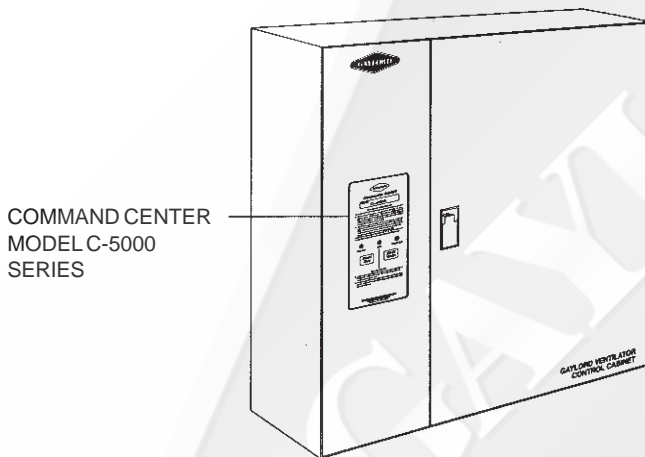


FIG. 8  
VENTILATOR CONTROL CABINET  
MODEL GPC-5000 SERIES

## INTERNAL FIRE MODE

The ventilator is equipped with a spring loaded fire damper located at the duct collar. The internal fire protection system is automatically activated whenever the fuse link or optional electrical thermostat reaches 280°F (138°C). Upon activation the following occurs:

1. The fire damper closes — stopping the combustion-supporting, natural draft through the ventilator. (Refer to Figure 13)
2. The exhaust fan serving the ventilator is shut off, stopping the combustion-supporting, mechanically induced draft. The supply fan is also shut off.
3. Fire-smothering water spray is released into the interior of the ventilator through the cleaning system.
4. The **"Fire"** light on the Command Center illuminates.

On fuse link activated ventilators, water will continue to run until it is shut off by the hand valve located inside the ventilator control cabinet. The fire damper must then be reset by replacing the fuse links. **IMPORTANT NOTE:** All replacement fuse links must be UL Listed and rated for 280°F (138°C).

The hand valve may then be reopened and the exhaust fan may then be re-started by pushing the **"Start Fan"** button on the Command Center.

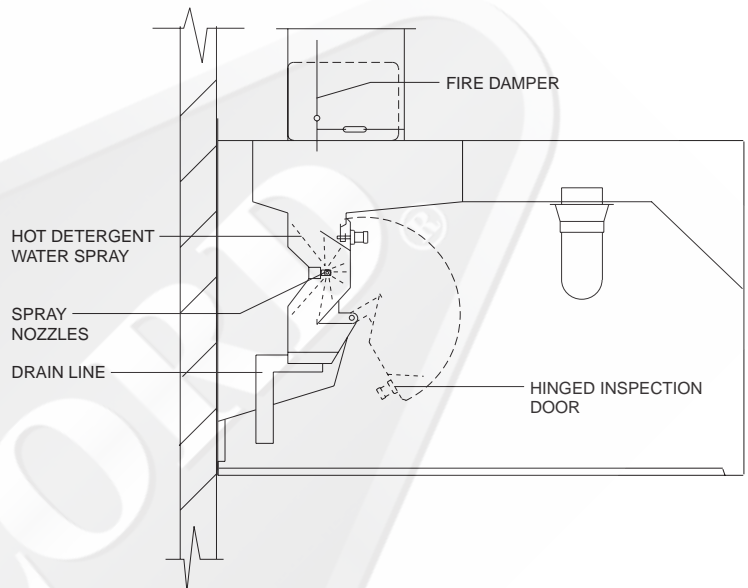


FIG. 9  
AUTOMATIC WASH CYCLE

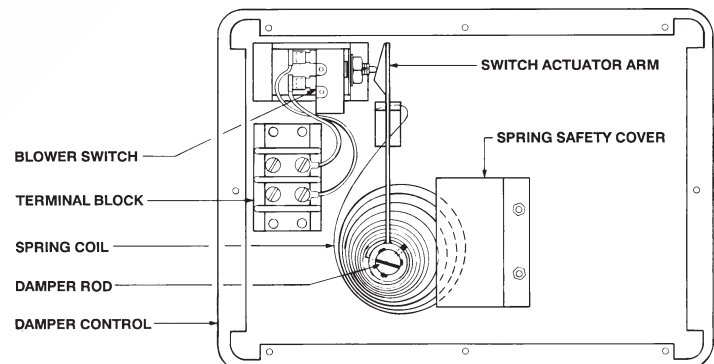
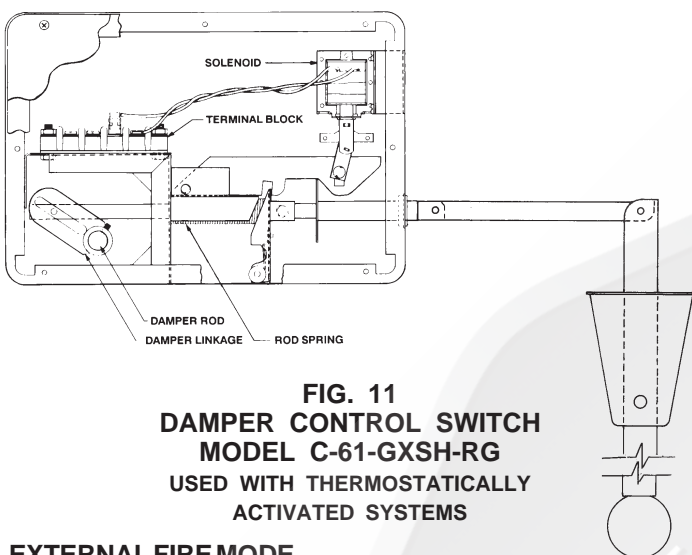


FIG. 10  
DAMPER CONTROL SWITCH  
MODEL C-61-GXB-RG  
USED WITH FUSE LINK  
ACTIVATED SYSTEMS

# "RG" SERIES VENTILATOR PRINCIPLE OF OPERATION

## INTERNAL FIRE MODE (CONTINUED)

On thermostatically activated systems, the water will run until the thermostat cools below 280°F (138°C), and then continue for a 5 minute cool down cycle. The water may be shut off prior to the end of the 5 minute cool down cycle by pushing the **"Cancel"** button located inside the electrical compartment of the control cabinet. After the water has shut off, the dampers can be reset by pulling the reset handle on the damper control switch (Refer to Figure 11), and the exhaust fan(s) restarted by pushing the **"Start Fan"** button on the Command Center.

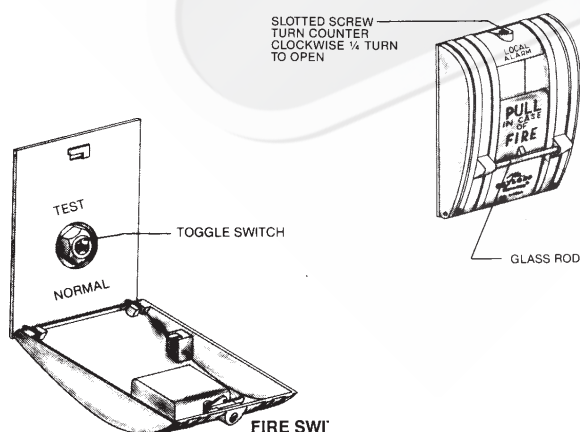


**FIG. 11**  
**DAMPER CONTROL SWITCH**  
**MODEL C-61-GXSH-RG**  
**USED WITH THERMOSTATICALLY**  
**ACTIVATED SYSTEMS**

## EXTERNAL FIRE MODE

A break glass type fire switch is optional and if provided, would normally be located at the exit of the kitchen. Pulling the fire switch shuts off supply fan and starts the exhaust fan if it was off, releases fire smothering water spray into the interior of the ventilator, and the **"Fire"** light on the Command Center flashes. During this time, the fire damper remains open, and the exhaust fan remains on to help remove smoke, heat, etc. If the fire intensified and the fuse link or thermostat reach 280°F (138°C), the fire damper would then close and the exhaust fan would shut off.

To resume normal operations, open the fire switch and flip the toggle switch to the position marked **"normal"**. (Refer to Figure 12) Replace the glass rod and close the cover.



**FIG. 12**  
**BREAK GLASS FIRE SWITCH**  
**C-1357A SERIES**

## TESTING INTERNAL FIRE MODE

The internal fire protection system may be tested periodically by pushing the **"Fire Test Switch"** which is located inside the electrical compartment of the control cabinet. Pushing this switch will cause the following:

Thermostatically Activated	Fuse Link Activated
1. Water turns on and will run for 5 minutes.	1. Water turns on and will run for 5 minutes.
2. Exhaust fan shuts off.	2. Exhaust fan shuts off.
3. Damper closes.	3. Fire light illuminates.
4. Fire light illuminates.	

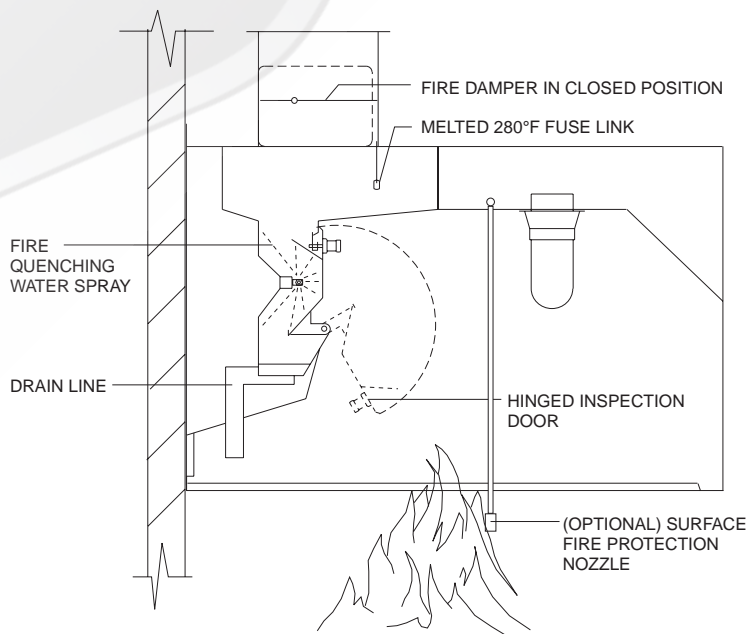
**CAUTION:** Before pushing the **"Fire Test Switch"**, check to see if the internal fire protection system is tied to the building alarm system.

## TO RESUME NORMAL OPERATION

1. To discontinue the 5 minute cool down cycle at any point during the cycle, push the **"Cancel"** button located inside the electrical compartment.
2. Reset all damper control switches, if thermostatically operated.
3. Push the **"Start Fan"** button on the Command Center.

## SURFACE FIRE PROTECTION

The Gaylord Ventilator may be equipped with surface fire protection either dry or wet chemical, or the Gaylord Quencher System. In the event of a fire, the surface fire protection system would normally be activated and discharged prior to the ventilator's internal fire protection. These systems may be intertied with the ventilator control cabinet to activate the External Fire Mode. If the fire is unusually severe or the surface fire protection system malfunctions, the ventilator's internal fire protection system would activate, thus providing a second level of defense.



**FIG. 13**  
**FIRE CYCLE**

## DAILY OPERATION

All functions of the ventilator, such as starting the exhaust fan, starting the wash cycle, etc., are controlled by the Command Center located on the control cabinet. Refer to Pages 13 through 15 for detailed instructions on the operation of the Command Center.

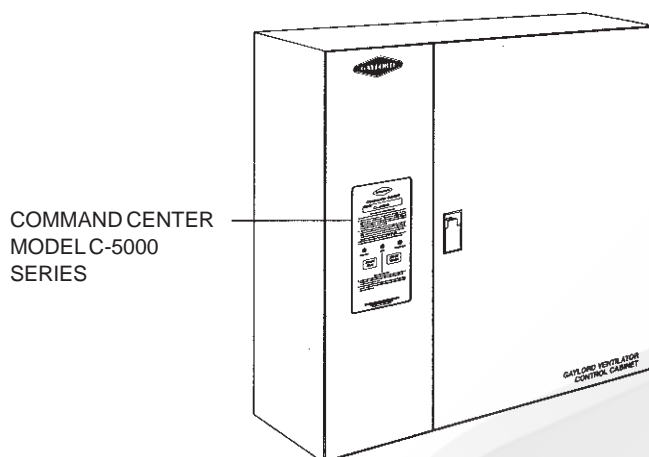


FIG. 14  
VENTILATOR CONTROL CABINET  
MODEL GPC-5000 SERIES

## Starting the Exhaust Fan

To start the exhaust fan push the **"Start Fan"** button on the Command Center. If the Command Center is equipped with a time clock ("TC" Series control), it may be programmed to start automatically at any desired time. (Refer to programming instructions on Page 15 for automatic operations.) The **"Fan On"** light will illuminate when the exhaust fan is running. It is important to start the exhaust fan before turning on the cooking equipment.

## Stopping the Exhaust Fan and Starting the Wash Cycle

**CAUTION:** The cooking equipment must be shut off prior to shutting off the exhaust fan. Failure to do this will cause excessive heat buildup and could cause the surface fire protection system to discharge.

1. To start the wash cycle push the **"Start Wash"** button on the Command Center. If the Command Center is equipped with a time clock ("TC" Series control), it may be programmed to start automatically at any desired time. Refer to programming instructions on Page 15 for automatic operations. When the wash cycle is activated the **"Wash On"** light illuminates and the following occurs:
  - A. The exhaust fan shuts off.
  - B. Hot detergent water is automatically released into the interior of the ventilator for the length of time set on the wash timer. The length of the wash cycle may be set for 3 different wash times, 3 minutes for light-duty equipment, 5 minutes for medium-duty equipment, and 9 minutes for heavy-duty equipment.

However, adequate cleaning is dependent upon water pressure, water temperature, daily grease accumulation, the length and frequency of the wash cycle, and the type of detergent being used. Refer to wash timing instructions on Page 14 for setting the length of the wash cycle.

**NOTE:** Some control cabinets are equipped with a low detergent switch. If so equipped, the **"Wash On"** light will flash if the detergent tank is empty or if the detergent pump is malfunctioning and detergent is not pumping.

2. After the wash cycle is completed, wipe the exposed front surface of the baffle at the air inlet of the ventilator, as well as other exposed exterior surfaces. (Refer to Figure 15)
3. The ventilator is now clean. The exhaust fan may be restarted by pushing the **"Start Fan"** button on the Command Center.

In very heavy cooking operations it may be necessary to wash the ventilator(s) more than once a day. If equipped with a time clock (Model C-5000-TC Series) the Command Center is capable of being programmed to start the wash cycle several times within a 24-hour period. Refer to programming instructions on Page 15.

**NOTE:** For proper operation of the wash system:

Water Pressure	40 psi min. - 80 psi max. (2.8Kg/cm <sup>2</sup> - 5.6Kg/cm <sup>2</sup> )
Water temperature	140°F min. - 180°F max. (60°C min. - 82°C max.)

**NOTE:** The ventilator wash system is designed to remove daily accumulations of grease within the extraction chamber. If the ventilator is not washed a minimum of once during a cooking day, a grease buildup could accumulate which the wash system cannot remove. If this occurs, it is recommended that the ventilator be put through several wash cycles by pushing the **"Start Wash"** button on the Command Center. If this does not remove the grease, it will be necessary to remove the grease manually by using a scraping tool, such as a putty knife, or retain the services of a commercial hood cleaning service to steam clean or pressure wash the system.

**WARNING:** Some commercial hood cleaning services blow a fire retardant chemical into hood and duct systems. Fire retardant chemicals should never be applied to any portion of The Gaylord Ventilator. If retardant is applied to the ventilator, it must be removed.



## PREVENTIVE MAINTENANCE

The following should be checked periodically in order to keep The Gaylord Ventilator operating at design efficiency:

### Weekly

1. The detergent tank should be checked at least weekly and kept full with a recommended detergent. (Refer to Page 12)

### Monthly

1. The detergent system fittings should be checked at least monthly. This is an airtight system and fittings should be tight. (For complete details refer to the Detergent Pump section on Page 12.)
2. At least monthly, at the conclusion of a wash cycle, open the inspection doors of the ventilator and check to ensure that the interior has been cleaned of grease, dust, and lint. (Refer to Figure 15) If overall cleaning appears to be inadequate, refer to "Trouble-Shooting of the Wash System", Page 19.
3. The main grease gutter of the ventilator should be checked at least monthly to remove any foreign material such as paper towels, order chits, etc.

### Every Six Months

1. Exhaust fan(s) should be checked every six months for belt tightness, belt alignment, and lubrication of necessary moving parts.

NOTE: A blue lithium based grease is best suited for high heat and speed bearing lubrication.

2. Check for proper velocity at air inlet slot. Refer to Pages 22 through 24 for method of checking velocity.
3. Test the "Internal Fire Mode" (electrically activated dampers only) to check for proper damper closure. Refer to page 5. Reset damper when test is complete.

4. Detergent tank and foot valve should be cleaned every six months.

NOTE: Annual and semi-annual inspections are recommended by the NFPA, Standard No. 96, Chapter 8. Factory trained service agencies are certified by Gaylord Industries, Inc. to perform these inspections. For the name and phone number of your nearest agent call 1-800-547-9696.

## INSPECTION AND CLEANING REQUIREMENTS

The 1998 edition of NFPA-96 (Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations) require that hoods, ducts and exhaust fans be inspected by a properly trained, qualified and certified company or person(s) in accordance with the following table.

Upon inspection, if found to be contaminated with deposits from grease-laden vapors, the entire exhaust system shall be cleaned by a properly trained, qualified, and certified company or person(s) acceptable to the authority having jurisdiction in accordance.

When a vent cleaning service is used, a certificate showing date of inspection or cleaning shall be maintained on the premises. After cleaning is completed, the vent cleaning contractor shall place or display within the kitchen area a label indicating the date cleaned and the name of the servicing company. It shall also indicate areas not cleaned.

EXHAUST SYSTEM INSPECTION SCHEDULE	
Systems serving solid fuel cooking operations	Monthly
Systems serving high-volume cooking operations such as 24-hour cooking, charbroiling or wok cooking	Quarterly
Systems serving moderate-volume cooking operations	Semiannually
Systems serving low-volume cooking operations, such as churches, day camps, seasonal businesses, or senior centers	Annually

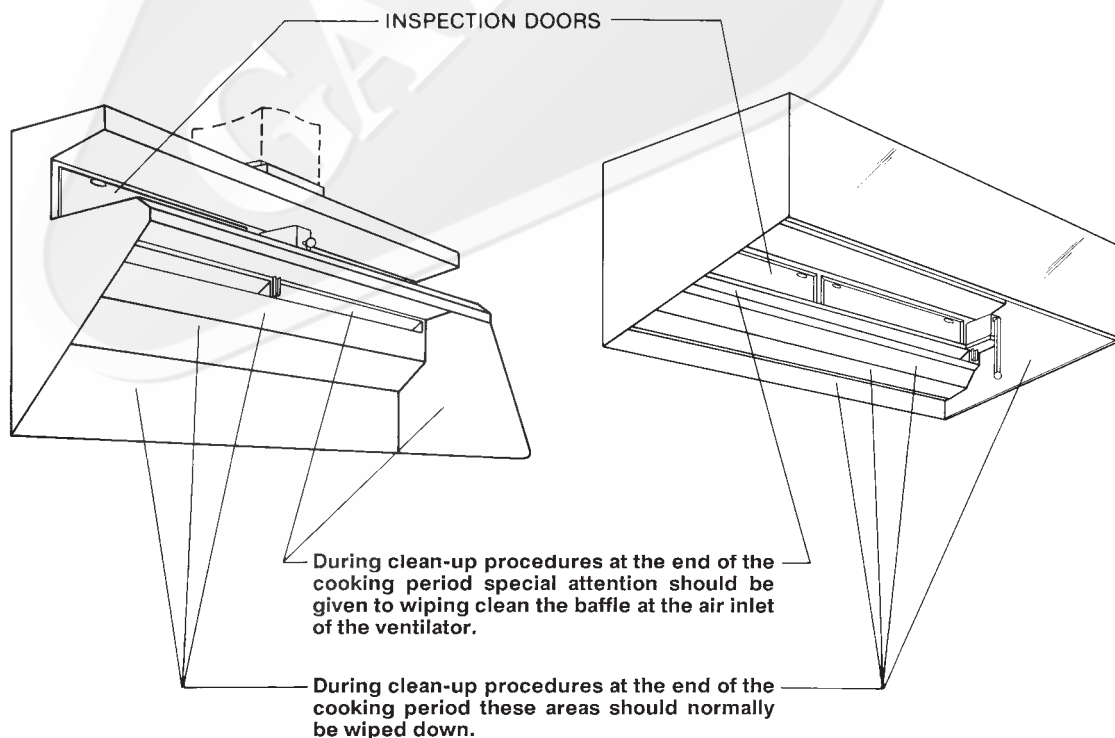


FIG. 15

# DETERGENT PUMP OPERATION

## DESCRIPTION

The Gaylord Ventilator detergent pump is an integral part of the wash-down system of The Gaylord Ventilator. The pump is located within the control cabinet unless otherwise specified. (Refer to schematic on Pages 26 through 29.)

## OPERATION

The detergent pump is started when the wash cycle begins. The pump draws detergent up from the detergent tank, pushing it through the copper tubing and into the hot water line serving the ventilator.

**NOTE:** Some control cabinets are equipped with a low detergent switch. If so equipped, the “Wash On” light will flash if the detergent tank is empty or if the detergent pump is malfunctioning and detergent is not pumping.

### Initial Operation

To prime and operate the pump for the first time, it is recommended that water be used instead of detergent to prevent detergent from spilling in case of leaks at the system’s fittings.

### Priming The Pump

The detergent pump is self-priming. Push the pump test switch, located on the junction box of the motor, and hold down until liquid climbs up the vinyl tubing and fills the pump head. The pump will be operating properly when both upper and lower poppet checks can be seen moving up and down slightly. If the pump does not self-prime, an air lock may have developed within the pump head and the following action should be taken:

1. Hold down pump test switch and loosen top cap slightly to allow air to be pushed out. Repeat as necessary until liquid climbs up tube and fills pump head.
2. If the pump still does not work properly, check the following:
  - A. Foot valve should be clean and immersed in the liquid.
  - B. Check all fittings to ensure an airtight system.
  - C. Poppet checks within the foot valve, pump head and brass check valve should be clean and operating freely.
  - D. Detergent lines should be free and clear.

## DETERGENT FLOW

Detergent flow is initially factory set according to the pipe size of the control cabinet (refer to chart). Generally, the factory setting will be sufficient to provide adequate cleaning of the ventilator. However, adequate cleaning is dependent upon a number of factors:

- |                              |                            |
|------------------------------|----------------------------|
| 1. Temperature of hot water  | 5. Frequency of wash cycle |
| 2. Water pressure            | 6. Type of detergent       |
| 3. Daily grease accumulation |                            |
| 4. Wash cycle time           |                            |

Depending upon these factors, it may be necessary to adjust the detergent flow. Adjustment may be accomplished by changing the cam to a different size. To change the cam:

1. Loosen Allen set screw on brass cam.
2. Remove cam and replace with next size as required.
3. Cam #1 minimum setting. Cam #4 maximum setting.

**NOTE:** Cams are available from Gaylord Industries or your Gaylord Certified Service Agency.

## PREVENTIVE MAINTENANCE

As with any piece of fine equipment, a reasonable amount of care must be taken to keep it in good working order:

1. Caution should be taken not to spill detergent on the exterior of the pump.
2. A periodic check should be made of all fittings to guarantee their tightness.

**NOTE:** The detergent pump motor has sealed bearings and will not require lubrication.

DETERGENT CONSUMPTION CHART  
(Imperial)

Control Cabinet Pipe Size	Factory Cam Setting	Oz. Per Min. at 40 PSI Water Pressure	WASH CYCLE LENGTH					
			3 Minutes		5 Minutes		9 Minutes	
			Oz. Per Day	Gal. Per Mo.	Oz. Per Day	Gal. Per Mo.	Oz. Per Day	Gal. Per Mo.
1/2"	#1	3.2	9.6	2.1	16.1	3.5	22.5	4.9
3/4"	#2	5.1	15.6	3.4	26.1	5.7	36.5	7.9
1"	#3	6.0	17.8	3.9	29.6	6.5	41.4	9.1
1 1/4" & 1 1/2"	#4	6.3	18.8	4.1	31.3	6.8	43.8	9.6

DETERGENT CONSUMPTION CHART  
(Metric)

Control Cabinet Pipe Size (mm)	Factory Cam Setting	Liters Per Min. at 2.8 kg/cm	WASH CYCLE LENGTH					
			3 Minutes		5 Minutes		9 Minutes	
			Liters Per Day	Liters Per Mo.	Liters Per Day	Liters Per Mo.	Liters Per Day	Liters Per Mo.
15	#1	.095	.285	8.55	.475	14.25	.665	19.95
20	#2	.150	.461	13.83	.772	23.16	1.079	32.37
25	#3	.177	.526	15.78	.876	26.28	1.225	36.75
32 & 40	#4	.186	.556	16.68	.926	27.78	1.296	38.38

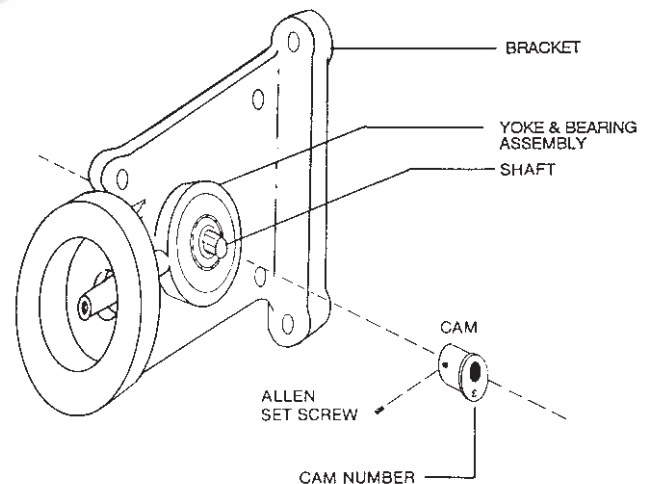


FIG. 16

## DETERGENT FOR THE WASH SYSTEM

FORMULA G-510 is the only cleaner recommended by Gaylord Industries for use in the washdown system of The Gaylord Ventilator. FORMULA G-510 is a concentrated colloid cleaner specially formulated to remove the daily accumulation of grease inside The Gaylord Ventilator without damaging the rubber and synthetic parts of the detergent pumping system. FORMULA G-510 is biodegradable, safe for kitchen personnel, and has a variety of uses.

### DILUTION OF FORMULA G-510 FOR VENTILATOR CLEANING

#### Normal Cleaning

For ventilators covering cooking equipment such as broilers, griddles, fryers, or any other heavy grease producing equipment, fill the detergent tank with full strength FORMULA G-510.

#### Light-Duty Cleaning

For ventilators covering light grease producing equipment such as ovens, kettles, steamers and ranges, fill the detergent tank with a mixture of one part FORMULA G-510 to one part water.

#### Cleaning the Ventilator Exterior

Mix one part FORMULA G-510 to twenty parts water in hand spray bottle. Spray on and wipe off. **NOTE:** Once a day, this same solution should be used to clean the front of the fire damper and main grease extracting baffle.

### FOR OTHER CLEANING JOBS

The colloidal action of FORMULA G-510 makes it a cleaner especially well-suited for use in kitchens. The colloids break up dirt and grease into millions of tiny particles that constantly repel each other. These particles cannot recombine or redeposit on a surface and are, therefore, easily washed away. FORMULA G-510 is biodegradable and contains no harsh chemicals, yet offers outstanding performance on the toughest cleaning jobs.

Use a mixture of one part FORMULA G-510 to twenty parts water for:

VINYL/PLASTIC/WALLS...Removes dirt, grease, food deposits and fingerprints.

REFRIGERATORS...Removes dirt, spilled milk, blood, mildew and objectionable odors.

RESTROOMS...Add a disinfectant to clean all fixtures, walls, floors, etc.

Use a mixture of one part FORMULA G-510 to five parts water for extremely heavy grease build-up, such as on the floor and on equipment around deep-fryers. Spray on and rinse or wipe off. For extremely soiled areas, gentle agitation, followed by a soaking period, will result in more thorough cleaning.

DON'T be afraid to experiment with FORMULA G-510 because it contains no phosphates, nitrates, enzymes, sulfates, sulfonates or silicates.

### LIMITED WARRANTY

G-510 CHEMICAL DIVISION warrants that FORMULA G-510 will not cause cleansing agent damage to the rubber and synthetic parts of the injection pump ("O" rings, diaphragms, washers, tubing, and other such parts) used with The Gaylord Ventilator, Heat Reclaim Unit, or Pollution Control Equipment. G-510 CHEMICAL DIVISION'S obligation under this warranty and any warranties implied by law shall be limited to repairing or replacing, at its option, any of said parts which G-510 CHEMICAL DIVISION'S examination shall disclose to its satisfaction to have been damaged by the use of FORMULA G-510 for the life of the detergent pumping system. This warranty shall not cover damages caused by any other detergent. The use of any other detergent shall void this warranty.

All repairs and replacement parts under this warranty shall be F.O.B. G-510 CHEMICAL DIVISION'S factory. The owner shall pay the necessary freight and delivery charges; also removal and installation costs. Any federal, state or local taxes are also extra. Requests for repairs or replacement parts should be made to G-510 CHEMICAL DIVISION, P.O. Box 1149, Tualatin, Oregon 97062-1149.

This is the sole warranty with respect to FORMULA G-510. G-510 CHEMICAL DIVISION MAKES NO OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORESAID OBLIGATION ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS AGREEMENT. G-510 CHEMICAL DIVISION SHALL NOT BE RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM A BREACH OF THIS WARRANTY.

### IMPORTANT

If a cleansing agent other than FORMULA G-510 is used with The Gaylord Ventilator injection pump, it is recommended that a warranty similar to the above be obtained from the manufacturer of said product.

For more information contact:

#### 20/10 Products

P.O. Box 7609

Salem, Oregon 97303

1-800-286-2010

FAX: 503-363-4296

email: [twentyten@juno.com](mailto:twentyten@juno.com)



# MODEL C-5000 SERIES COMMAND CENTER - INSTRUCTIONS

## MODEL C-5000 SERIES COMMAND CENTER - GENERAL

The Model C-5000 Series Command Center controls all of the functions of the Gaylord Water-Wash Ventilator.

The C-5000 Series Command Center is available in four basic models. They are:

Model	Description of Operation
C-5000 .....	Manual start fan and start wash
C-5000-TC .....	Programmable time clock operation of the start fan and start wash functions
C-5000-S .....	Manual start fan and start wash functions with sequence wash feature
C-5000-TC-S .....	Programmable time clock operation of the start fan and start wash functions with sequence wash feature

The model number of your control is indicated on the Command Center label. Refer to Figure 17.

### STARTING THE FAN AND WASH CYCLE

The Model C-5000 and C-5000-S Command Centers start fan and start wash functions are the same. To start the exhaust fan push the **"Start Fan"** button and to start the wash cycle push the **"Start Wash"** button. The exhaust fan automatically shuts off when the "Start Wash" button is pushed.

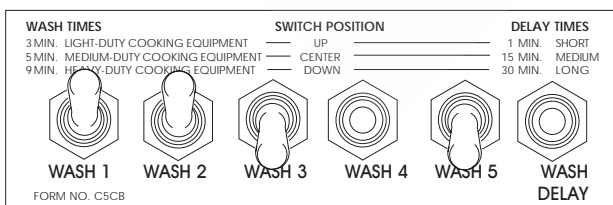
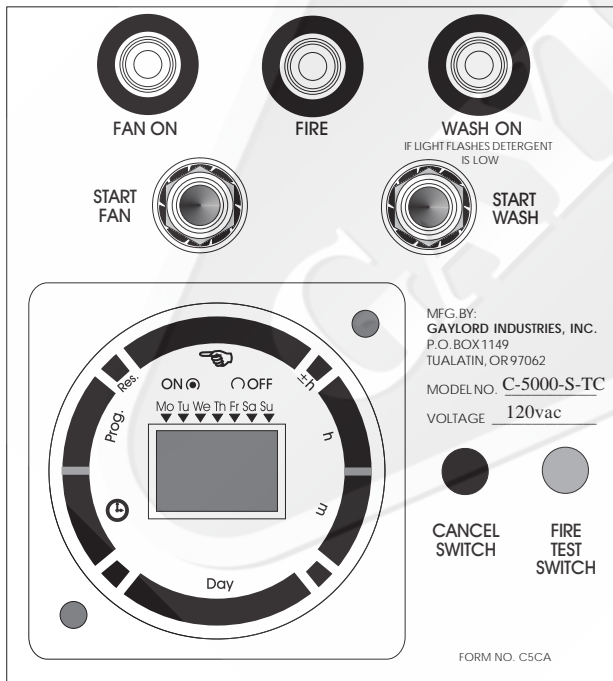


FIG.17

Models C-5000-TC and C-5000-TC-S include a time clock which can be programmed to start the fan and wash cycle at any desired time. (Refer to programming instructions on Page 15.) However both of these Command Centers may also be operated manually by pushing the **"Start Fan"** or **"Start Wash"** buttons.

### SETTING WASH CYCLE TIME FOR MODELS C-5000 AND C-5000-TC COMMAND CENTERS

To set the length of the wash cycle, open the electrical compartment. At the bottom of the control chassis is a three position toggle switch labeled Wash 1 (refer to Fig.17). Set the toggle switch for either 3, 5 or 9 minutes for light, medium or heavy duty equipment as required (refer to "Recommended Wash Time" chart on page 14). Upon activation of the wash cycle, the detergent injected hot water will wash the interior of the extraction chamber for the length of time selected and then shut off.

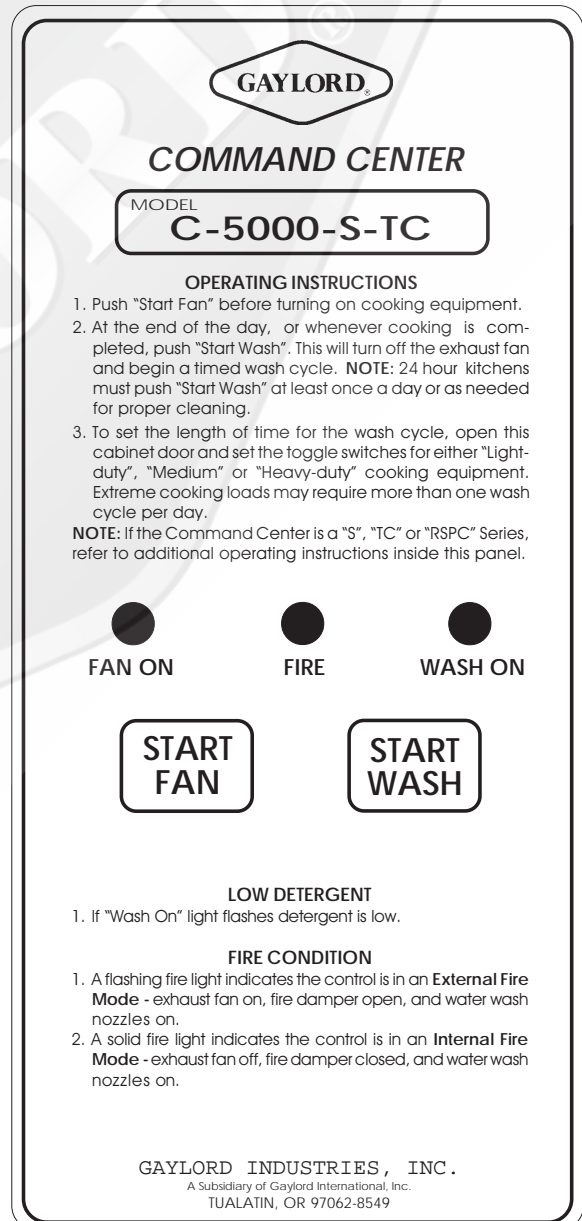


FIG.18

## SETTING WASH CYCLE TIMES FOR MODELS C-5000-S AND C-5000-TC-S COMMAND CENTERS

The C-5000-S and C-5000-TC-S Command Center incorporates timers for sequence washing of groups of ventilators with time delays between each wash group. The length of the wash time for each group may be individually set as dictated by the type of cooking equipment. The delay time between each wash group allows the hot water heater to regain if necessary and may be set for 1, 15 or 30 minutes as required. The number of wash groups on this control is indicated by the model number. Example: Model C-5000-S-3 would have three wash groups, as indicated by the suffix "3" immediately following the "S" suffix.

### TO SET TIMES:

There are up to five three position toggle switches for setting the wash time of each group. Set each toggle switch on one of the three positions, 3, 5 or 9 minutes, as required by the type of cooking equipment under the ventilators. Refer to the recommended wash time chart below. Set the delay time for 1, 15 or 30 minutes using the toggle switch labeled "Wash Delay."

Upon activation of the wash cycle, each group, beginning with "Wash 1," will wash for the set time with a delay time, as set on the "Wash Delay" switch, between them.

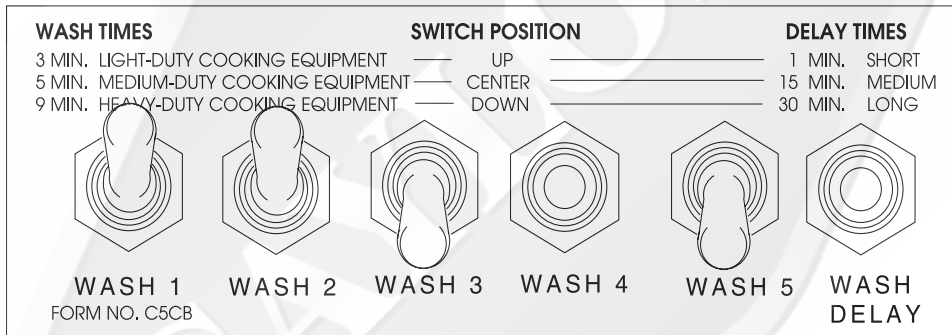


FIG. 19

RECOMMENDED WASH TIME CHART	
TYPE OF COOKING EQUIPMENT	RECOMMENDED WASH TIMES (MINUTES)
<b>LIGHT DUTY</b> ..... Ovens, steamers, and kettles	<b>3</b>
<b>MEDIUM DUTY</b> ..... Braising pans/Tilting skillets, fryers, griddles, grooved griddles, open burner ranges, hot top ranges, and conveyor ovens	<b>5</b>
<b>HEAVY DUTY</b> ..... Gas and electric char broilers, upright broilers, woks and conveyor broilers, Solid fuel broilers	<b>9</b>

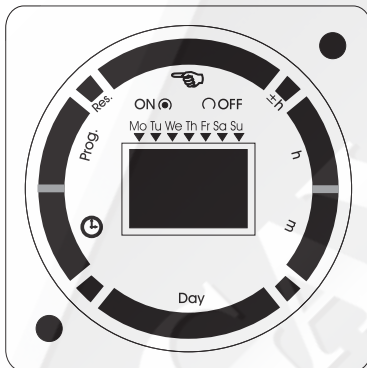
## General Information

The circular keypads are positioned to provide a sequential path for programming. Starting with **Prog.** to select a program, clockwise to **ON** or **OFF**, then **h** for hour, **m** for minute, and finally **Day** to select day or days of the week. If an input is missing or incomplete, the missing segments will flash when the **ON** or **program** key is depressed. (For example, if no ON or OFF is selected, the ON symbol will flash). The missing entry must be completed before programming can resume. While programming, pressing the **h**, **m**, or **Day** key longer than 2 seconds will cause a rapid roll of the parameter.

- A program consists of:
  1. ON or OFF command,
  2. Hour and minute, and
  3. Day or multiple days on which it is to occur.
- **Res.** is the reset which clears the time of day and deletes all program information.
- The **±1h** key sets clock time up or down one hour for daylight savings time adjustment in the spring and fall.
- Military (24:00 hr.) or AM/PM (12:00 hr.) time may be selected by pressing and holding the **h** key while depressing the **±1h** key.

**Note:** A flashing display indicates either incomplete data entry or the battery is low. Check to see if days and ON or OFF times are entered and check the power supply to the time control.

**IMPORTANT:** Depress reset key before beginning to set time and program



## Setting Time and Day of Clock

1. Select military (24:00 hr.) or AM/PM (12:00 hr.) time mode by depressing and holding **h** key while pressing **±1h** key to toggle between military and AM/PM. (AM appears in display when in AM/PM mode.)
2. Press and hold down **⌚** key, and proceed as follows:
  - A. If setting the time when daylight savings time is in effect, press **±1h** key once (+1h will appear in display).
  - B. Set hour with **h** key. Scroll the clock until either AM or PM appears as required. If AM or PM does not appear in display, the unit is in military time. GO back to Number 1 to change AM/PM mode.
  - C. Set minutes with the **m** key.
  - D. Press **Day** key repeatedly to the day of the week. (1 is Monday, 7 is Sunday)
  - E. Release **⌚** key, colon will begin flashing. If the days are flashing, the day of the week was not entered (see Step D).

## Programming Start Fan and Start Wash Times

1. Press **Prog.** key 

1	2	3	4	5	6	7
AM - - : - -						

 will appear in display.  
(Pressing **Prog.** key again, display will show the number of free programs; **Fr 20**). Press again to return to 1st program.
2. Press **⌚** key, **ON** symbol will appear. Pressing the key again will toggle to OFF **⌚**. Select ON for start fan or OFF for start wash.
3. Press **h** to select hour for switching time.
4. Press **m** to select minute for switching time.
5. If the program is to occur every day of the week, (24 hour time control) ignore **Day** key and press **Prog.** key to advance to the next program.
6. If 7 day time control is desired, press **Day** key. 1 2 3 4 5 6 (Mon thru Sat) block of days appears in display. Pressing **Day** key again, 1 2 3 4 5 (Mon thru Fri) appears in display. Pressing **Day** key again, 6 7 (Sat and Sun) appears in display. Pressing **Day** key again, 1 (Mon) appears in display. Repeated presses will cycle through all days of the week, and back to 1 thru 7 (Mon thru Sun). Select day or block of days desired with the **Day** key.
7. Press **Prog.** key and repeat steps 2 thru 6 to enter additional programs of ON (start fan) and/or OFF (start wash) times.
8. Press **⌚** key to enter run mode.

**IMPORTANT:** The output relays will switch ON (or OFF) only at the programmed times. After programming is completed, if a channel should be ON, it must be manually turned ON with the **⌚** key. For example, programming is completed at 2PM and CH1 was programmed to be ON at 8AM and OFF at 5PM. After pressing the **⌚** key, CH1 will be OFF; press **⌚** to turn it ON. It will assume automatic operation at the 5PM OFF time.

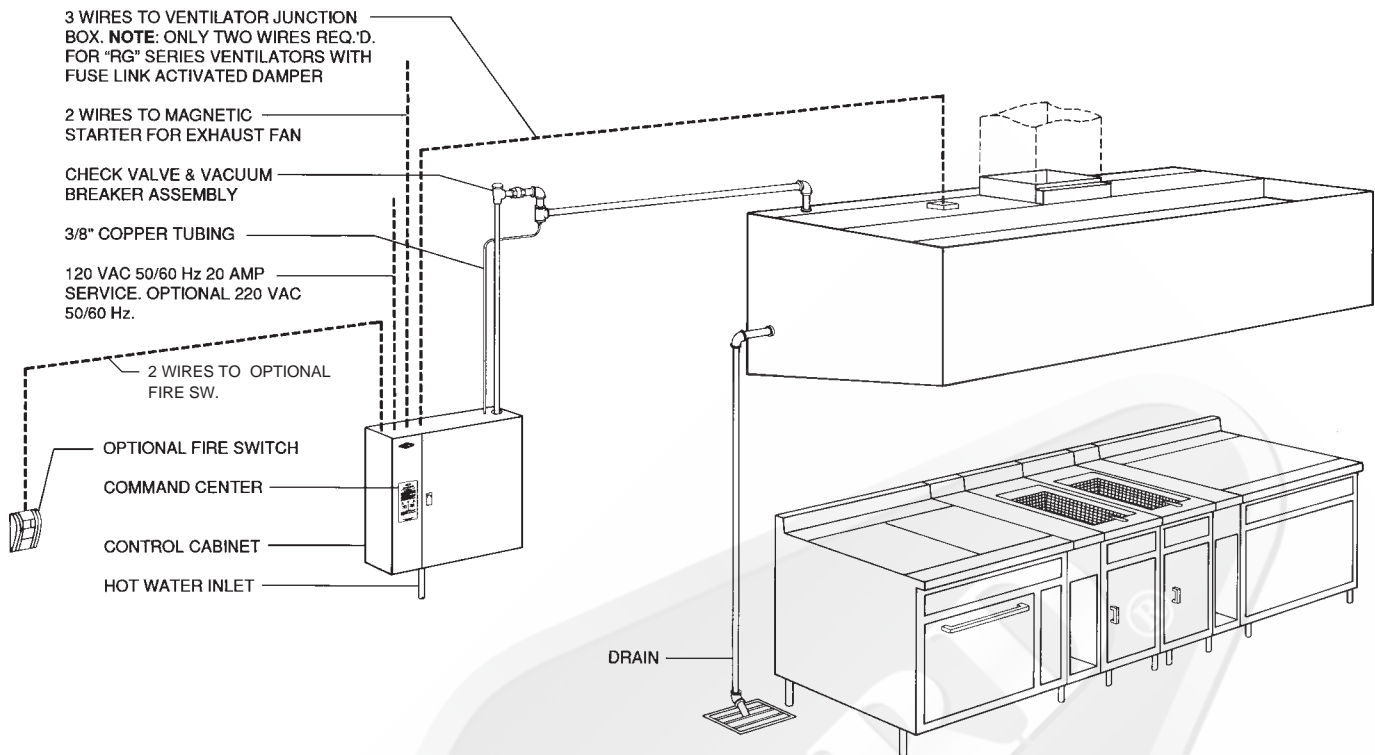
## Review and Change of Programs

1. To review a program at any time, press **Prog.** key. Programs will be displayed in the sequence they were entered with repeated presses of **Prog.** key.
2. To change a program, select the program to be changed with the **Prog.** key, and enter the new time of day, and/or days of week just as in the programming steps shown above. The old program is overwritten with the new selections. Press **Prog.** to store the new program.
3. To delete an individual program, select the program as in Step 1 and press the **m** key and then the **h** key until "-:-" appears in the display. Press either **Prog.** or **⌚** key until "-:-" flashes. The program is deleted after a few seconds.

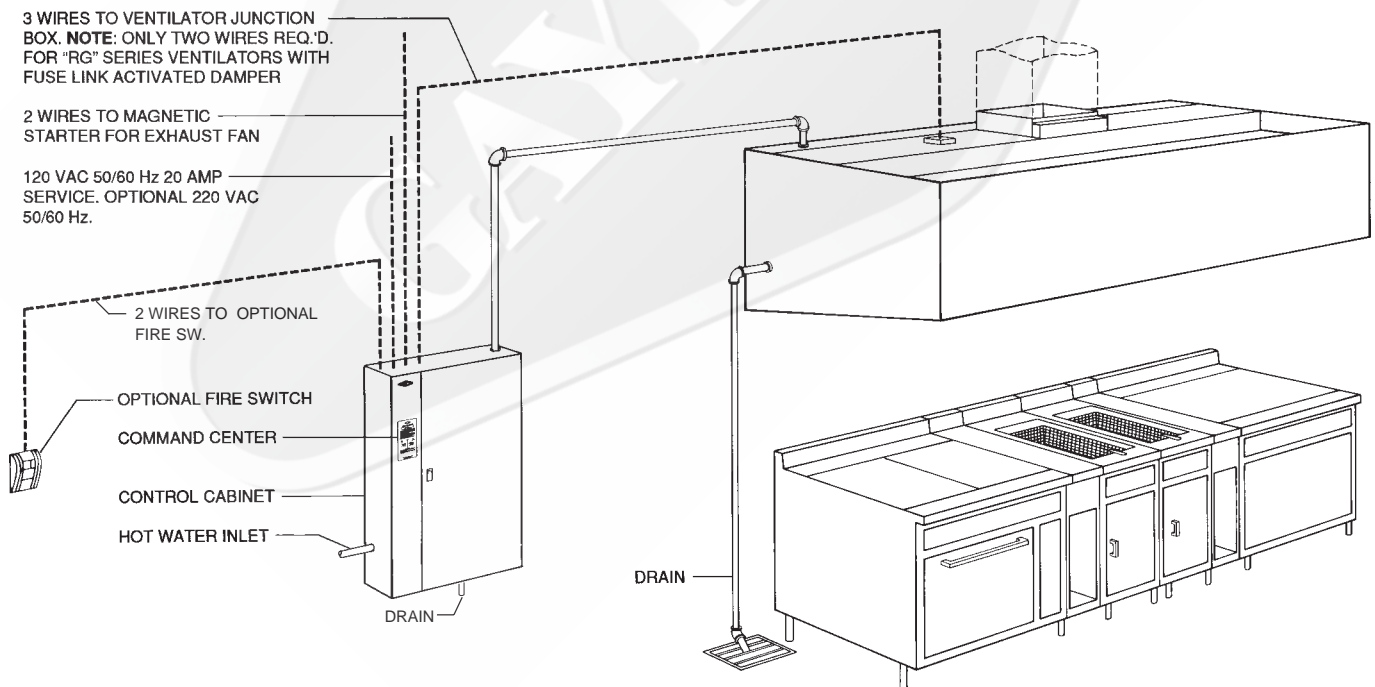
## Manual Override

While in the **Run** mod, (**⌚** symbol is displayed), pressing the key will reverse the load status (switch load OFF if it is ON, or switch ON if it is OFF). A hand symbol appears in display to indicate the override is active. At the next scheduled switching time, automatic time control will resume, eliminating the override.

Pressing the **⌚** key a second time [**⌚**] appears in the display indicating the load is switched **permanently ON**. Pressing the **⌚** key a third time, [**⌚**] appears in the display indicating the load is switched **permanently OFF**. Pressing the **⌚** key a fourth time returns to automatic, **⌚** appears in the display.



**FIG. 20A**  
**TYPICAL ARRANGEMENT WITH VACUUM BREAKER/CHECK**  
**VALVE BACKFLOW PREVENTION**



**FIG. 20B**  
**TYPICAL ARRANGEMENT WITH BUILT-IN "RP" DEVICE**  
**FOR BACKFLOW PREVENTION**



Each Gaylord Ventilator is engineered to properly ventilate the specific cooking operation. The exhaust air volume is engineered as a specific volume per lineal ft. of ventilator and is determined by the type of cooking equipment being ventilated. The following Air Volume Chart lists the various volumes per lineal ft. designs.

AIR VOLUME CHART (Imperial)		
Model AB, BD, BDL Series, and C & E up to 300 CFM/FT. only.	Desired CFM Per Lineal Foot	Static Pressure At Duct Collar
	150*	1.33
	250	1.33
	300	1.70
	350	1.65
	400	1.65
	450	2.00
	500	2.40
Model BDL-DS Series	Total Both Slots	
	400	1.50
	500	2.15

\* With Custom Air Baffles

AIR VOLUME CHART (Metric)		
Model AB, BD, BDL Series, and C & E up to 300 CFM/FT. only.	Desired LTRS/Sec. Per Lineal Meter	Static Pressure Pascals (PA) At Duct Collar
	227*	331
	379	331
	454	423
	530	411
	606	411
	681	498
	757	597
Model BDL-DS Series	Total Both Slots	
	606	373
	757	535

\* With Custom Air Baffles

A ventilator may be designed to operate at two different air volumes. For example, half the ventilator may operate at 150 CFM/Lin. Ft. by utilizing "Custom Air" Baffles, and the other half at 250 CFM/Lin. Ft.

Refer to "Measuring Inlet Slot Velocity" on Page 22 for instructions on how to determine the designed Air Volume/Lin. Ft.

The total exhaust volume for each ventilator is stamped on the ventilator nameplate. (Refer to Figure 26 on Page 24.)

## DUCT VELOCITY

Based on 1800 FPM (9.14 M/S)

## WATER TEMPERATURE REQUIREMENTS

IMPERIAL	METRIC
140°F Min. - 180°F Max.	60°C Min. - 82°C Max.

## WATER PRESSURE REQUIREMENTS

IMPERIAL	METRIC
40 PSI Min. - 80 PSI Max.	2.8 kg/cm - 5.6 kg/cm

## WATER CONSUMPTION

(Imperial)		
	250 Extractor	400 Extractor & DS Series
CG Series	1.0 GPM/FT	1.60 GPM/FT
RG Series	.50 GPM/FT	.80 GPM/FT
(Metric)		
	250 Extractor	400 Extractor & DS Series
CG Series	.208 L/S/METER	.331 L/S/METER
RG Series	.104 L/S/METER	.166 L/S/METER

The length of the wash cycle may be set for 3 different times, 3 minutes for light-duty equipment, 5 minutes for medium-duty equipment, and 9 minutes for heavy-duty equipment.

## ELECTRICAL REQUIREMENTS

Standard voltage 120 volt, 60 Hz. Provide 24 hour, 20 amp service.

Optional voltage 220 volt, 50 Hz. 220 volt. All controls are marked with their operating voltage. See pages 34 through 41.

## MAKE-UP AIR

Make-up air must be supplied for replacement of air exhausted through all kitchen exhaust systems. Make-up air should be delivered through registers at ceiling height and distributed throughout the kitchen. A general "rule of thumb" is that 75% to 80% of the replacement air should be fresh, conditioned (heated or cooled) air brought into the kitchen area -- with the remaining 20% to 25% allowed to flow into the kitchen from adjacent areas.

**NOTE:** RECOMMENDED PERCENT OF MAKE-UP AIR FOR "MA" SERIES VENTILATORS INCORPORATING INTEGRAL MAKE-UP AIR WILL VARY. REFER TO THE GAYLORD MASTER ENGINEERING DATA SHEET FOR SPECIFIC REQUIREMENTS.

**NOTE:** AIR VOLUME AND STATIC PRESSURE REQUIREMENTS ARE BASED UPON OPERATION AT MEAN SEA LEVEL UNLESS OTHERWISE INDICATED. AIR VOLUME AND STATIC PRESSURE MUST BE CORRECTED FOR HIGHTITUDES.

The following section will enable you to correct minor operational difficulties and keep your Gaylord Ventilator operating at the high performance levels for which it was designed.

### SMOKE LOSS

1. If the Gaylord Ventilator is not exhausting properly, check the following:
  - A. Air Velocity — Average air velocity through the air entry slot should be in accordance with the Air Velocity chart on Page 22. For proper method of measuring the air velocity, refer to Page 23. If the velocity is low, check for the following:
    - (1) Fire damper is open.
    - (2) Broken or slipping belt in exhaust fan.
    - (3) Proper rotation of exhaust fan wheel.
    - (4) Proper size of exhaust fan (fan must deliver nameplate rating).
    - (5) Ductwork inspection panel left open.
  - B. The Gaylord Ventilator must have its own exhaust system and no other exhaust, such as dishwasher hoods, should be tied into it.
  - C. Exhaust Fan Discharge
    - (1) There should be no screen over the discharge. If one is found, it should be removed.
    - (2) The direction of discharge should not be into the prevailing winds nor downward onto the roof. A vertical discharge is highly recommended.
  - D. Make-Up Air — Smoke loss may be experienced if there is inadequate make-up air. Make-up air must be supplied for replacement of air exhausted through all kitchen exhaust systems. Make-up air should be delivered through registers at ceiling height, and distributed throughout the kitchen area. Make-up air registers located near the ventilator, the louvers should be adjusted to direct the air away from the ventilator. Directing, or forcing make-up air at the ventilator typically creates cross drafts resulting in smoke loss. A general "rule of thumb" is that 75% to 80% of the replacement air should be fresh, conditioned, (heated or cooled) air brought into the kitchen area, with the remaining 20% to 25% allowed to flow into the kitchen from adjacent areas.

### GREASE EXTRACTION

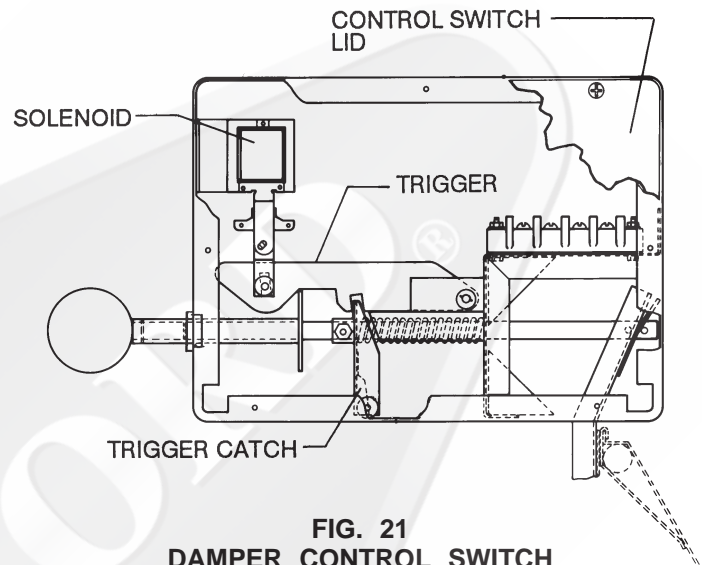
The Gaylord "CG" and "RG" Series Ventilators extract up to 95% of the grease, dust, and lint particles from the airstream passing through it, when operated and maintained in accordance with design specifications. If it appears that the ventilator is not extracting properly, typically the exhaust volume is low. Check the inlet slot velocity as described on Pages 22 through 24.

### EXHAUST FAN OPERATION

1. If the exhaust fan does not come on when the "Start Fan" button is pushed or as programmed, if equipped with a time clock ("TC" Series), and the "Fan On" light does not come on, check the following:
  - A. The main power supply should be checked to make sure it is turned on and is functioning.
  - B. Check fuse inside the control cabinet.

2. If the "Fan On" light on the Command Center is illuminated, but the exhaust fan is not on, check the following:

- A. Check exhaust fan for loose or broken belts.
- B. If "CG" Series ventilator or "RG" Series ventilator with electrically operated damper, check the plunger arms on the damper control switches to ensure the damper is open. The plunger arms must all be in the reset position. If the plunger arms will not reset and lock in place, remove the lid, and check for mechanical malfunction in the interior. (Refer to Figure 21).



**FIG. 21**  
**DAMPER CONTROL SWITCH**

- C. If "RG" Series ventilator with fuse link operated damper, check the fire damper at the exhaust duct collar to make sure that the damper is in the open position.
- D. Magnetic starter for exhaust fan — It is possible that the overload protectors within the magnetic starter switch may have actuated and stopped the fan. Push the "reset" button on the magnetic starter, and then push the "Start Fan" button on the Command Center.
- E. In the event that an H.O.A. (Hands On/Automatic) type magnetic starter switch is used, check the selector switch to make sure it is in the automatic position.
- F. Check exhaust fan motor circuit breaker and check fuses in disconnect switch normally located next to the fan.

## C-5000 COMMAND CENTER

1. If the indicator lights will not light when either “**Fan Start**” or “**Wash Start**” button is pressed.
  - A. Check circuit breaker to system.
  - B. Check the 4 amp and 2 amp fuses mounted on the terminal block.
  - C. Check the nine pin socket and plug that leads from the component board to the front board.

## FIRE CYCLE

1. If the **“Fire”** light is on solid but there is no fire, check the following:
  - A. Check to see if there is voltage at terminal number 3. If there is voltage, the problem is external to the Control. Check the following:
    1. If the ventilator is a “CG” Series or “RG” Series with thermostat activated damper, run a continuity check on each thermostat to make sure none are in the closed position.
    2. If the ventilator is a “RG” Series with a fuse link activated fire damper, check the fire damper to make sure it is in the fully open position. A damper that is not fully opened against the damper stops allows the micro switch in the damper control switch to close, instigating an internal fire mode.
    3. Look for other causes for terminal 3 to have voltage such as misconnected wires at a junction box.
  2. If the **“Fire”** light is flashing but there is no fire, check the following:
    - A. Check the break glass fire switch, if one was provided, to see if it was pulled. To return fire switch to the normal position: (1) open the case by turning the holding screw at the top of the case counter-clockwise with a slotted screwdriver; (2) open the case; (3) flip toggle switch to the position marked “normal”; (4) replace the glass rod which was broken when switch was pulled to activate fire system; (5) close the case.
    - B. Check other Control circuits that may be wired to terminals FS1 and FS2 - such as building alarms, DDC systems, pre-engineered fire systems, etc.
    - C. Disconnect all wiring from terminals FS1 and FS2. If Control remains in an external fire mode, replace relay 9 located on the component module. (Refer to illustration on Page 30.) *Caution: Line voltage is present on these terminals.*

## WASH SYSTEM

1. If the ventilator does not seem to be washing properly, check the following:
  - A. **Water Supply.** See that the water supply to the control cabinet is turned on.
  - B. **Water Pressure** - Check the water pressure gauge within the control cabinet. Pressure should be 40 pounds minimum (2.8 kg/cm<sup>2</sup>) while the ventilators are washing. If the pressure is below minimum, an increase is necessary. 80 pounds (5.6 kg/cm<sup>2</sup>) is the maximum pressure recommended; and if above 80 pounds (5.6 kg/cm<sup>2</sup>), a pressure regulator should be used.

- C. **Water Temperature** - Check the temperature gauge within the control cabinet. The hot water used for cleaning should be between 140°F and 180°F (60°C - 82°C). If the water temperature is below the recommended minimum, it should be increased.
- D. **Length of Wash Cycle** - The length of the wash cycle may be set for 3 different wash times, 3 minutes for light-duty equipment, 5 minutes for medium-duty equipment, and 9 minutes for heavy-duty equipment. (Refer to wash timing instructions on Page 14 to adjust the length of wash cycle.)
- E. **Detergent** - The detergent tank may be empty, or the detergent being used may not be suitable for the purpose. Refer to page 12.
- F. **Detergent Pump** - It may be necessary to increase the detergent ratio. Refer to Page 11 for instructions.
- G. **Nozzles** - Check the spray nozzles. If a nozzle is clogged, it is easily removed, cleaned by running a small wire through it, and replaced.
2. If water is running when ventilator is not in a wash cycle, check the following:
  - A. If the “**Fire**” light on the Command Center is on solid or flashing, refer to “Fire Cycle”.
  - B. If the detergent pump is not running, but water is spraying, it indicates that the solenoid valve is stuck in the open position. If this is the case, do the following:
    - (1) Gently tap the valve housing. This should release foreign material trapped in the valve.
    - (2) If tapping does not release the foreign material, remove the valve coil and stem — clean and replace. Be extremely careful not to damage the plunger.
    - (3) Valve diaphragm may have failed. Rebuild with appropriate size repair kit. Refer to Page 32.
3. If the “**Start Wash**” button is pushed, the exhaust fan shuts off and the “**Wash On**” light comes on, but water is not spraying, check the following:
  - A. **Shut-Off Valve** - This valve is located in the control cabinet and **MUST BE OPEN**.
  - B. **Solenoid Valve**:
    - (1) Coil may have burned out. Check continuity.
    - (2) Foreign material in the hot water supply line may have clogged the solenoid valve and prevented its opening. If this is the case, a light tap on the solenoid valve housing will release the valve.
  - C. **Wiring Circuit** - If the situation is not corrected after checking all components, check the wiring circuit. (Refer to Pages 34 through 41.)



## BACKFLOW PREVENTORS

Model GPC-5000 Series control cabinet uses a vacuum breaker/check valve assembly for backflow prevention. Model GPC-5000-RP Series control cabinet uses a reduced pressure principle device (RP) for backflow prevention. Refer to Pages 26 through 28 for illustrations of each. The type of backflow preventor used is dictated by state, county or city code.

### VACUUM BREAKER

1. If the vacuum breaker leaks or “spits” either at the beginning or the end of the wash cycle, check the following:
  - A. Check to make sure the vacuum breaker is mounted 6" higher than the line going to the ventilator. (See illustration on Page 26.)
  - B. Remove the top cap of the vacuum breaker and check to make sure the nylon check valve slides up and down on the guide stem properly, and that the stem is straight.
  - C. Check to make sure that the rubber washer on top of the nylon check seats properly against the machined surface, and that the surfaces of both the rubber washer and the machined surface are smooth.

### RP DEVICE

The reduced pressure principle device (RP) is required to prevent contaminated water from backflowing upstream to potable water.

1. **Initial Start-up**-To avoid water hammer or shock damage perform the following initial start-up procedures:
  - A. Close the outlet hand valve.
  - B. Open the inlet hand valve slowly, fill the valve and blend the air through test cock number 2, 3, and 4.
  - C. When the valve is filled, open the outlet hand valve slowly and fill the remaining supply system. The initial start-up procedure is now complete.

The reduced pressure principle device type backflow preventor (refer to Figure 22A & 22B) consists of two primary chambers with spring loaded check valves and a secondary chamber

with a spring loaded relief valve. This device prevents backflow by opening and closing the check valves if the pressure from the inlet side to the outlet side of the device varies.

1. **Intermittent Discharge** - Intermittent discharge of water through the relief valve is fairly common and usually occurs if there is inlet pressure fluctuations of more than 3 psi and when the solenoid valve closes after a wash cycle.
2. **Continuous Discharge** - If there is continuous discharge of water out the relief valve when the ventilator is not in a wash cycle, do the following:
  - A. Leave the inlet hand valve open and close the outlet hand valve. If there is still continuous discharge it indicates that foreign material is preventing the first check valve from closing. If flushing will not clear the unit, remove and clean the first check valve.
  - B. If there is continuous discharge of water out of the relief valve during a wash cycle, there is foreign material preventing complete closing of the relief valve. Flushing the relief valve may correct this condition.

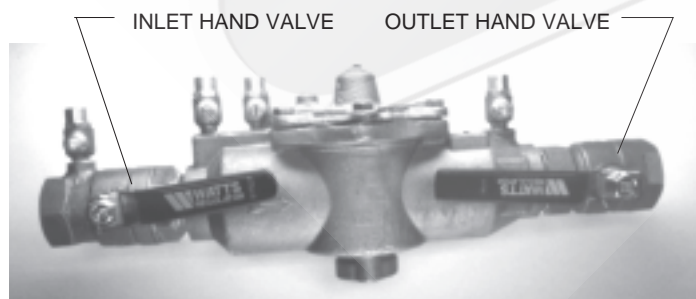
Repeat procedure if necessary. If flushing does not stop discharge with flow through the device, remove and clean relief valve.

In no case should the relief valve outlet port be plugged, closed off or restricted.

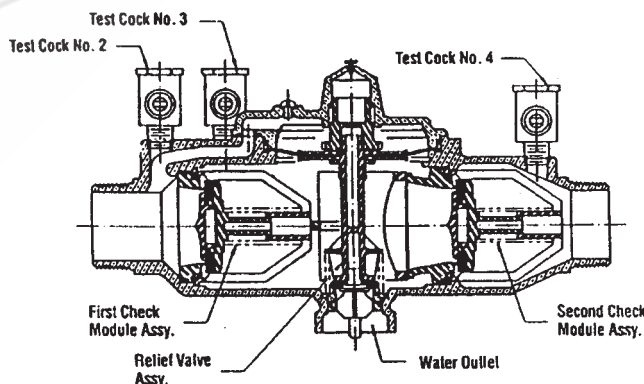
This device should be inspected occasionally for continual discharge from the relief valve, which indicates a need for maintenance. It is recommended that the RP device be inspected and tested once a year.

**NOTE:** Some regulations require annual inspection and testing by a company certified to perform such duties.

See Instruction Manual IS-TK-DP, obtainable from your Watts installer or distributor. For the name of your nearest installer or distributor, call Watts Regulator at (508)688-1811.



**FIGURE 22A**  
**REDUCED PRESSURE PRINCIPLE DEVICE**  
**BACKFLOW PREVENTOR**



**FIGURE 22B**  
**REDUCED PRESSURE PRINCIPLE DEVICE**  
**BACKFLOW PREVENTOR**

## DRAINS

1. If the ventilator drains become clogged, check the following:
  - A. **Drain Outlet** - Reach in through the inlet slot of the ventilator and check to see if foreign material such as rags, paper towels, order chits, etc., have clogged the drain opening.
  - B. **Grease Traps** - Some cities and counties have codes which require grease traps. If this is the case, they must be kept free and clear.

## C-5000 STATUS LIGHT CHART

The following is a list of how the status lights will appear on the C-5000 PLC that is operating correctly.

INPUT LIGHT	STANDARD (SINGLE WASH) DESCRIPTION
0	On while "Start Fan" button is pushed.
1	On when optional Time Clock initiates a "Start Fan" command.
2	On all the time, goes off when "Cancel" button is pushed.
3	On only while "Fire Test Switch" is pushed, or hood is in Internal Fire Mode.
4	On when Break Glass Pull Station is activated for External Fire Mode.
5	On all the time, goes off if cabinet is equipped with Low Detergent alert feature and the detergent is low.
6	On while "Start Wash" button is pushed.
7	Not Used
8	Wash Time Selector; light is on for light wash, off for medium or heavy wash
9	Wash Time Selector; light is on for heavy wash, off for light or medium wash
INPUT LIGHT	SEQUENTIAL (MORE THAN ONE WASH) DESCRIPTION
0	On while "Start Fan" button is pushed.
1	On when optional Time Clock initiates a "Start Fan" command.
2	On all the time, goes off when "Cancel" button is pushed.
3	On only while "Fire Test Switch" is pushed, or hood is in Internal Fire Mode.
4	On when Break Glass Pull Station is activated for External Fire Mode.
5	On all the time, goes off if cabinet is equipped with Low Detergent alert feature and the detergent is low.
6	On while "Start Wash" button is pushed.
7	Wash Delay Selector; light is on for short delay, off for medium or long delay
8	Wash Delay Selector; light is on for long delay, off for short or medium delay
9	1st Wash Time Selector; light is on for light wash
10	1st Wash Time Selector; light is on for heavy wash
11	2nd Wash Time Selector; light is on for light wash
12	2nd Wash Time Selector; light is on for heavy wash
13	3rd Wash Time Selector; light is on for light wash
14	3rd Wash Time Selector; light is on for heavy wash
15	4th Wash Time Selector; light is on for light wash
16	4th Wash Time Selector; light is on for heavy wash
17	5th Wash Time Selector; light is on for light wash
18	5th Wash Time Selector; light is on for heavy wash
19	Not Used

- C. **Pre-Flush Line** - This line is located in the ventilator and runs from the spray manifold to the ventilator drain. Check to make sure that the pre-flush line is aimed into the drain opening so that it purges the drain properly.
- D. **Size of Drains** - Drains should not be less than 1-1/2" throughout the system.

OUTPUT LIGHT	STANDARD (SINGLE WASH) DESCRIPTION
0	On when exhaust fan should be on. Also energizes "Fan On" light.
1	On when supply fan should be on.
2	On when detergent pump should be on and wash solenoid valve open.
3	On during wash cycle to energize the "Wash On" light.
4	On during Internal or External Fire Mode to energize "Fire" light.
5	On during Internal or External Fire Mode to energize fire alarm relay.
OUTPUT LIGHT	SEQUENTIAL (MORE THAN ONE WASH) DESCRIPTION
0	On when exhaust fan should be on. Also energizes "Fan On" light.
1	On when supply fan should be on.
2	On when detergent pump should be on.
3	On during wash cycle to energize the "Wash On" light.
4	On during Internal or External Fire Mode to energize "Fire" light.
5	On during Internal or External Fire Mode to energize fire alarm relay.
6	On during wash cycle to open 1st wash solenoid valve
7	On during wash cycle to open 2nd wash solenoid valve
8	On during wash cycle to open 3rd wash solenoid valve
9	On during wash cycle to open 4th wash solenoid valve
10	On during wash cycle to open 5th wash solenoid valve
11	On during motorized damper control operation, if equipped.

## MEASURING INLET SLOT VELOCITY

Smoke capture and grease extraction efficiency are dependent upon the proper air velocity at the inlet slot of the ventilator.

The "Air Velocity Chart" below gives the optimum inlet slot velocity and the minimum and maximum allowed velocities. If the slot velocity is below or above the minimum or maximum, the exhaust fan must be adjusted accordingly.

NOTE: The height of the inlet slot can vary depending upon the design of the ventilator. It is, therefore, important to first measure the inlet slot and compare it to the chart below to determine the required average inlet slot velocity. The designed air volume per lineal foot is related to the velocity as shown on the chart below. The total air volume for the ventilator can be found on the ventilator nameplate. (Refer to Figure 25).

Air velocity readings less than what is specified on the "Air Velocity Chart" may allow smoke and grease to escape the

confines of the ventilator and/or reduce grease extraction efficiency. This can result in grease deposits which lead to sanitation problems or fire hazards if left uncorrected. If the air velocity readings are higher than the maximum allowed, it will require more energy to operate the exhaust fan, excessive noise levels will result, and grease can be pulled through the extractor depositing in the duct and fan.

Higher or lower velocities than the allowed will normally put the entire heating and ventilating system out of balance.

When measuring the air velocity it is very important to take readings across the inlet slot plane as illustrated in Figures 23 and 24. Positioning the sensing head incorrectly will give velocity readings that cannot be compared to the "Air Velocity Chart". The sensing heads shown in Figure 23 are of the design typically used on anemometer type instruments.

**AIR VELOCITY CHART  
(Imperial)**

FOR ALL "CG" & "RG" SERIES EXCEPT "DS" SERIES									
Nominal Height of Inlet Slot	Without Custom Air Baffles				With Custom Air Baffles				
	Designed CFM per Lineal Ft.	Average Inlet Slot Velocity (FPM)			Designed CFM per Lineal Ft.	Average Inlet Slot Velocity (FPM)			
		Min.	Optimum	Max.		Min.	Optimum	Max.	
3"	250	920	<b>1000</b>	1200	150	550	<b>600</b>	630	
	270	990	<b>1080</b>	1200	160	590	<b>640</b>	675	
	285	1050	<b>1140</b>	1200	170	625	<b>680</b>	655	
	300	1100	<b>1200</b>	1260	180	660	<b>720</b>	695	
4"	400	1100	<b>1200</b>	1260	240	670	<b>725</b>	700	
	450	1250	<b>1350</b>	1420	270	750	<b>820</b>	790	
	470	1300	<b>1425</b>	1500	280	780	<b>848</b>	820	
	500	1380	<b>1500</b>	1575	300	830	<b>900</b>	870	

**AIR VELOCITY CHART  
(Metric)**

FOR ALL "CG" & "RG" SERIES EXCEPT "DS" SERIES									
Nominal Height of Inlet Slot (mm)	Without Custom Air Baffles				With Custom Air Baffles				
	Designed LTRS/Sec. Per Lineal Meter	Average Inlet Slot Velocity (M/S)			Designed LTRS/Sec. Per Lineal Meter	Average Inlet Slot Velocity (M/S)			
		Min.	Optimum	Max.		Min.	Optimum	Max.	
76.2	379	4.67	<b>5.08</b>	6.10	227	3.17	<b>3.05</b>	3.20	
	409	5.03	<b>5.49</b>	6.10	242	2.99	<b>3.25</b>	3.43	
	432	5.33	<b>5.79</b>	6.10	258	3.17	<b>3.45</b>	3.32	
	454	5.59	<b>6.10</b>	6.40	273	3.35	<b>3.66</b>	3.53	
101.6	606	5.59	<b>6.10</b>	6.40	363	3.40	<b>3.68</b>	3.55	
	681	6.35	<b>6.91</b>	7.21	409	3.81	<b>4.17</b>	4.01	
	712	6.60	<b>7.24</b>	7.62	424	3.96	<b>4.30</b>	4.16	
	757	7.01	<b>7.62</b>	8.00	454	4.21	<b>4.57</b>	4.41	

**FOR "DS" SERIES VENTILATORS\***

Designed CFM Per Lineal Ft.			Required Average Inlet Slot Velocity (FPM)					
Total Both Slots	Front Slot	Rear Slot	Front Slot			Rear Slot		
			Min.	Optimum	Max.	Min.	Optimum	Max.
300	150	150	550	<b>600</b>	630	625	<b>680</b>	655
400	250	150	920	<b>1000</b>	1200	625	<b>680</b>	655
500	310	190	1100	<b>1200</b>	1260	790	<b>860</b>	900

**FOR "DS" SERIES VENTILATORS\***

Designed LTRS/Sec. Per Lineal Meter			Average Inlet Slot Velocity M/S					
Total Both Slots	Front Slot	Rear Slot	Front Slot			Rear Slot		
			Min.	Optimum	Max.	Min.	Optimum	Max.
454	227	227	3.05	<b>3.05</b>	3.20	3.17	<b>3.45</b>	3.32
606	379	227	5.08	<b>5.08</b>	6.10	3.17	<b>3.45</b>	3.32
257	469	288	6.10	<b>6.10</b>	6.40	4.01	<b>4.37</b>	4.57

\*The nominal height of the front inlet slot on "DS" series ventilators is always 3".

# MEASURING INLET SLOT VELOCITY

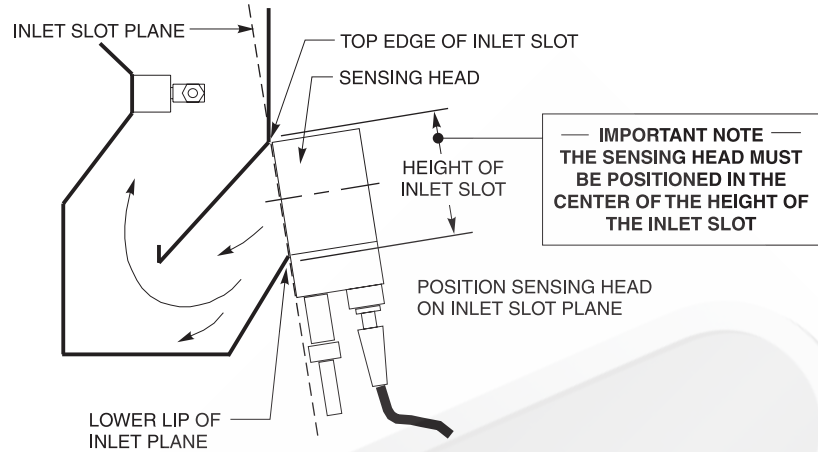


FIG. 23A

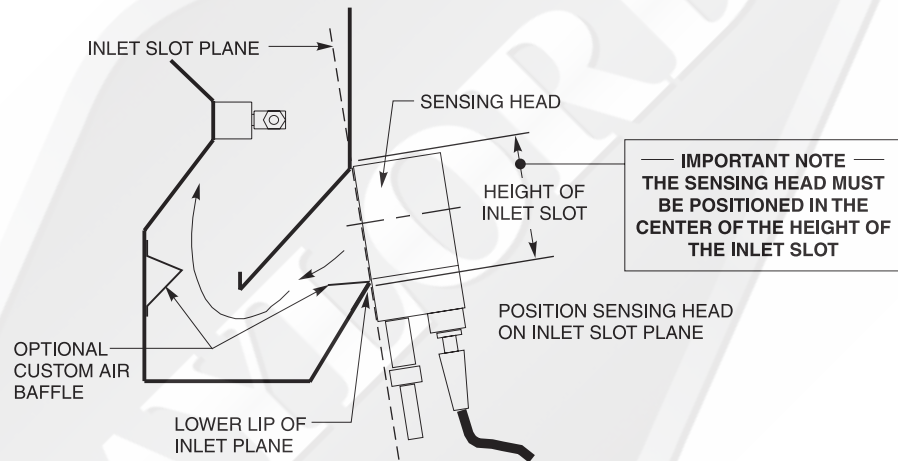


FIG. 23B

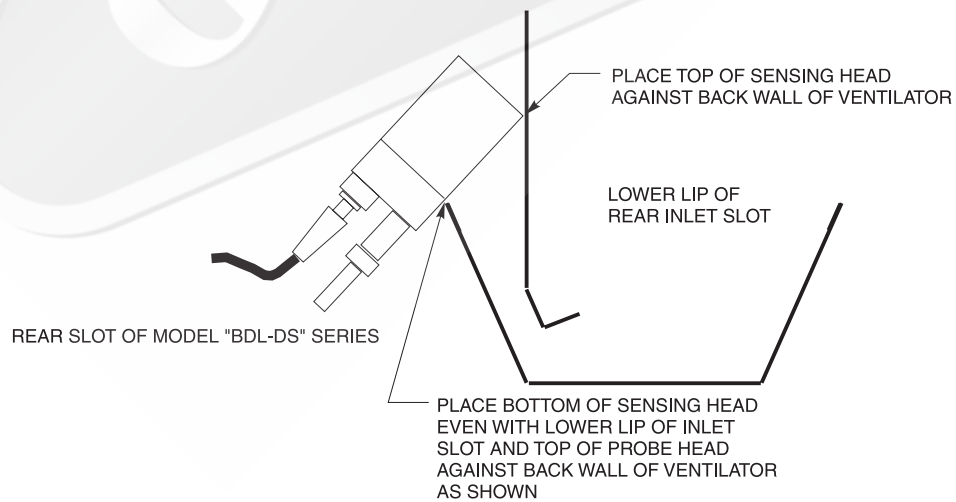


FIG. 23C

## CROSS SECTION OF TYPICAL VENTILATOR INLET SLOTS



# MEASURING INLET SLOT VELOCITY

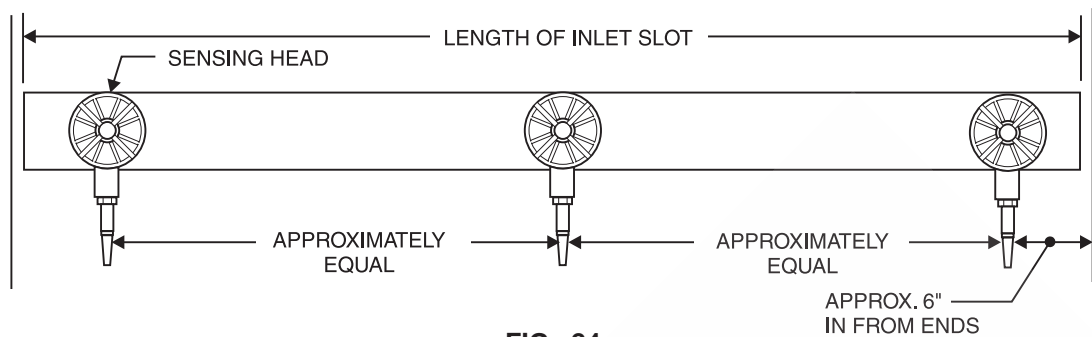


FIG. 24  
FRONT VIEW OF INLET SLOT

The illustrations on page 23 and 24 show the use of a Pacer digital anemometer model DA4000 or DA40. This is the standard instrument used for Gaylord ventilators and it is recommended that this instrument or equivalent be used. To take accurate air velocity readings, follow the instructions below.

### Instructions

1. It is first necessary to determine if the ventilator includes Custom Air baffles as shown in fig. 23B. If shop drawings are available, and if equipped, the custom baffles and their location will be noted on the front elevation. If not available, to determine if Custom Air baffles are provided, place your hand over the lower lip of the inlet slot and slide it along the entire length of the slot to feel for the baffle.
2. If the ventilator includes Custom Air baffles, it will be necessary to take two sets of readings - one for the section of ventilator that includes Custom Air baffles and one where it does not.
3. Starting at one end of the ventilator, place the probe head in the middle of the slot on the inlet slot plane as shown in figure 23A.
4. Turn on the meter and push the 16 second average button.

5. Slide the probe head along the slot to the end of the ventilator or to the intersection of the Custom Air baffle, at a rate that would complete the reading in approximately 16 seconds. If you reach the end of the slot before the 16 seconds has elapsed, without removing the probe head slide it back in the other direction until the 16 seconds has expired.

6. Record the velocity (fpm) on the start up inspection report form. A sample report form, which can be photocopied, is provided on page 44.

7. The designed, or optimum velocity is noted on the shop drawings and the [Air Velocity Chart](#) on page 23. Two velocities will be noted if the ventilator includes custom air baffles.

8. Compare the recorded air velocity to the designed air velocity shown on the shop drawings or the [Air Velocity Chart](#) on page 22. The recorded velocity may be slightly lower or higher providing that it is within the minimum and maximum range as shown on the [Air Velocity Chart](#).

If the air velocity is outside the minimum/maximum range, the performance of the ventilator will be affected and therefore the exhaust fan **must** be adjusted.

**EXHAUST HOOD WITH EXHAUST DAMPER**

FOR USE ONLY WITH GAYLORD INDUSTRIES LISTED SUB-ASSEMBLY CONTROL CABINET MODEL NUMBER GPC-4000 OR GPC-5000 SERIES

THIS EXHAUST HOOD HAS BEEN TESTED TO STANDARD UL 710 "EXHAUST HOODS FOR COMMERCIAL COOKING EQUIPMENT"

THIS EXHAUST HOOD IS LISTED UNDER UL FILE NUMBER MH11403

THIS EXHAUST HOOD MEETS ALL REQUIREMENTS OF THE LATEST EDITION OF NFPA-96

PATENT NUMBERS: USA, 3,247,776; 3,611,909; 3,786,041; 4,072,143; 4,266,529; 4,281,635; 4,356,870; Australia, 481,510; 465,037; Canada, 744,166; 759,710; 926,689; 1,139,151; 968, 559; 940,761; 1,004,155; 1,086,126; France, 7,207,617; 7,852,718; 2,351,262; Germany, 2,346,196; 1,604, 173; 3, 152, 501; Great Britain, 1,350,857; 1,396,065; 1,558,537; Japan, 650,265; 797,637; 917, 077; 1,045,507; 728,884; 1, 580, 556; New Zealand, 162,024; 167,964; Switzerland, 560,358; other U.S. and foreign patents pending.

WORLD HEADQUARTERS  
**GAYLORD INDUSTRIES, INC.**  
A SUBSIDIARY OF GAYLORD INTERNATIONAL, INC.  
10900 S.W. AVERY STREET  
TUALATIN, OR 97062-8549 USA

UL-CG/RG 697

**ENGINEERING DATA**

1. MINIMUM TOTAL EXHAUST VOLUME FOR THIS HOOD SECTION	C.F.M.
2. MAXIMUM TOTAL SUPPLY VOLUME FOR THIS HOOD SECTION	C.F.M.
3. EXHAUST STATIC PRESSURE AT DUCT COLLAR	W.G.
4. SUPPLY STATIC PRESSURE AT DUCT COLLAR	W.G.
5. THIS HOOD SECTION SUITABLE FOR APPLIANCES WITH MAXIMUM COOKING SURFACE TEMPERATURE OF:	
<div><div>°F</div><div>°F</div></div> FOR <div></div> LINEAL FT. OF HOOD	
<div><div>°F</div><div>°F</div></div> FOR <div></div> LINEAL FT. OF HOOD	
6. REFER TO GAYLORD VENTILATOR TECHNICAL MANUAL FOR INLET SLOT VELOCITY REQUIREMENTS AND METHOD OF CHECKING VELOCITY	
7. ELECTRICAL RATING OF LIGHT FIXTURES: 120 VOLT, 60 HZ. OR 220 VOLT, 50 HZ. OVERALL RATING - 12 AMPS OR LESS	
8. VENTILATOR ELECTRICAL CONTROL CIRCUIT MUST BE FUSED SEPARATELY	
9. IF HOOD IS EQUIPPED WITH FUSE LINK OPERATED EXHAUST FIRE DAMPER USE ONLY 280° F, RATED 30 LBS. MIN. UL LISTED FUSIBLE LINK FOR REPLACEMENT	
10. IF HOOD IS EQUIPPED WITH INTEGRAL MAKE-UP AIR WITH FUSE LINK OPERATED FIRE DAMPER USE ONLY 165° F, RATED 30 LBS. MIN. UL LISTED FUSIBLE LINKS FOR REPLACEMENT	
11. DUCTWORK AND EXHAUST FAN	
A. STATIC PRESSURE OF DUCT MUST BE ADDED TO VENTILATOR STATIC FOR TOTAL SYSTEM STATIC	
B. ALL DUCTWORK MUST BE WELDED WATERTIGHT	
SERIAL NO:	GI-
MODEL NO:	
<b>HOOD MOUNTING REQUIREMENTS</b>	
MINIMUM DISTANCE FROM COOKING SURFACE TO FRONT LOWER EDGE OF HOOD	
MAXIMUM DISTANCE FROM COOKING SURFACE TO FRONT LOWER EDGE OF HOOD	
MINIMUM OVERHANG FROM FRONT OF HOOD CAVITY TO FRONT OF COOKING SURFACE	
MAXIMUM SETBACK FROM FRONT OF HOOD CAVITY TO FRONT OF COOKING SURFACE	
MINIMUM OVERHANG FROM SIDE OF HOOD TO EDGE OF COOKING SURFACE	

FIG. 26  
VENTILATOR NAME PLATE

## GENERAL

Continuous cold water mist is an option on all "CG" or "RG" Series ventilators and is typically used on ventilators that cover solid fuel burning appliances such as mesquite broilers.

Continuous cold water mist ventilators incorporate a water manifold with spray nozzles, located at the lower edge of the air inlet slot. (Refer to Figure 28) When the exhaust fan is started, the solenoid valve in the cold water loop in the Gaylord control cabinet opens (refer to illustration on Page 30), turning on the mist nozzles which remain on as long as the exhaust fan is on. The nozzles produce a very fine mist and are located so that the entire air stream passes through the mist. The purpose of the mist is to knock down any hot embers, produced by the solid fuel, that may be drawn up into the ventilator and to cool down the exhaust air.

## ENGINEERING

1. **Pipe Size** - 1/2" cold water supply required to the control cabinet.
2. **Water Pressure** - 40 psi (2.8 kg/cm<sup>2</sup>) flow pressure. The control cabinet is equipped with an adjustable pressure regulator.
3. **Water Consumption** - .66 gph/lineal ft. (8.19 LM/lineal meter) of ventilator.

## MAINTENANCE

Every six months check the following:

1. **Water Pressure** - Turn on the exhaust fan, opening the control cabinet door and check the water pressure gauge in the cold water loop. Water flow pressure should be at 40 psi (2.8 kg/cm<sup>2</sup>). If it is not, adjust the pressure regulator until 40 psi (2.8 kg/cm<sup>2</sup>) is achieved.

2. **Mist Nozzles** - Turn on the exhaust fan, look into the air inlet slot and check each mist nozzle for proper spray. Remove and clean the nozzle if necessary.

## TROUBLE-SHOOTING

1. If the mist nozzles do not come on when the fan is started, check the following:
  - A. Open the electrical compartment of the control cabinet and check to ensure that the cold water mist override switch is in the "On" position.
  - B. Check the cold water mist hand valve in the control cabinet to ensure that it is in the "Open" position.
  - C. Check the cold water mist solenoid coil for voltage. Also check the coil for continuity.
  - D. Foreign material in the cold water supply line may have clogged the solenoid valve and prevented its opening. If this is the case, a slight tap on the solenoid valve housing should release the valve.
2. If water mist is spraying out of the air inlet slot, check the following:
  - A. With the cold water mist on, open the control cabinet and check the pressure gauge to ensure that the flow pressure is not above 40 psi (2.8 kg/cm<sup>2</sup>). Adjust the pressure reducing valve if necessary.
  - B. With the cold water mist on, check the mist nozzles for even spray. Foreign particles in the nozzle could cause an erratic mist causing it to come out the air inlet slot.

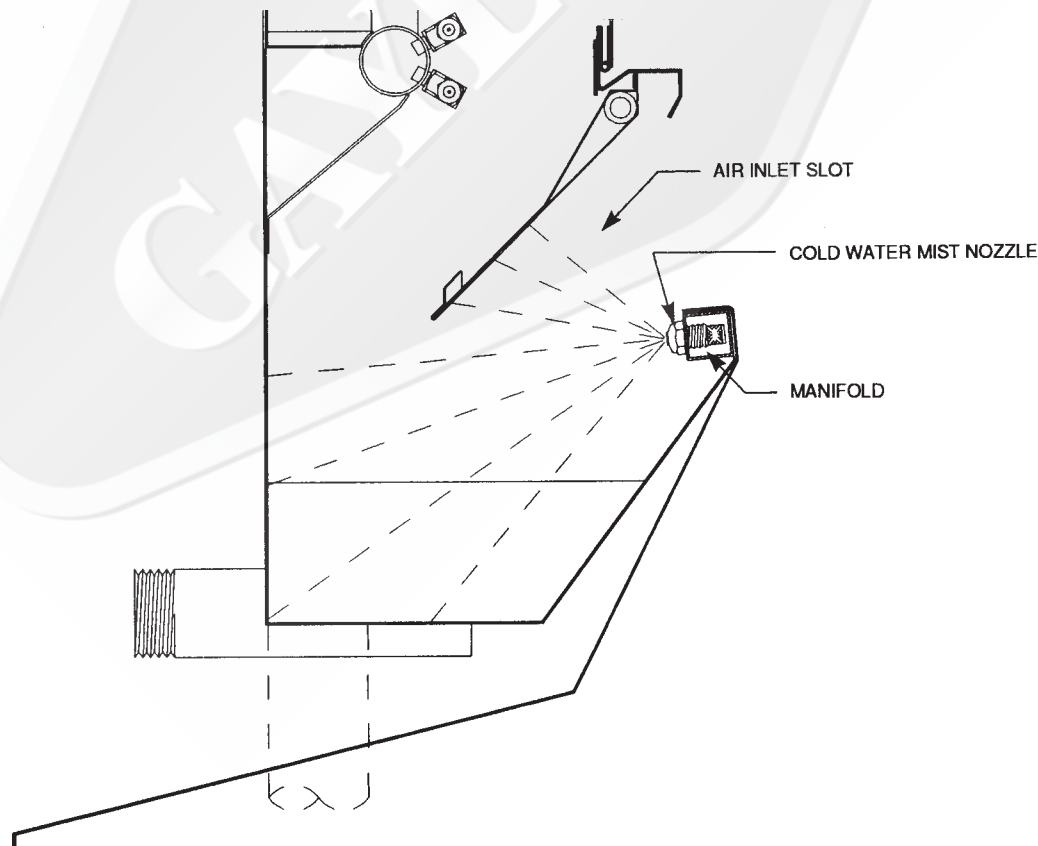
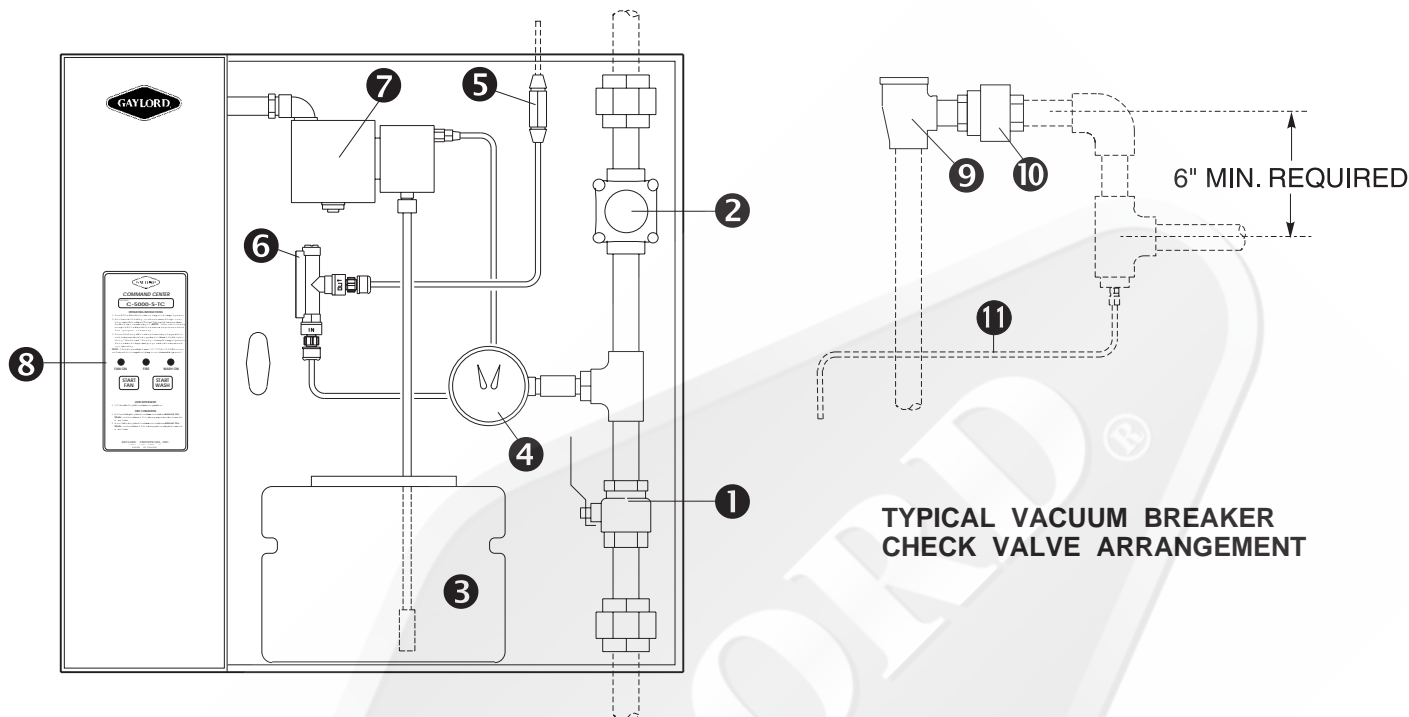


FIG. 27  
CONTINUOUS COLD WATER MIST

## MODEL GPC-5000 SERIES CONTROL CABINET

This Control Cabinet Is Used When A Reduced Pressure Principle Device Backflow Preventor Is Not Required And A Vacuum Breaker Is Allowed For Backflow Prevention

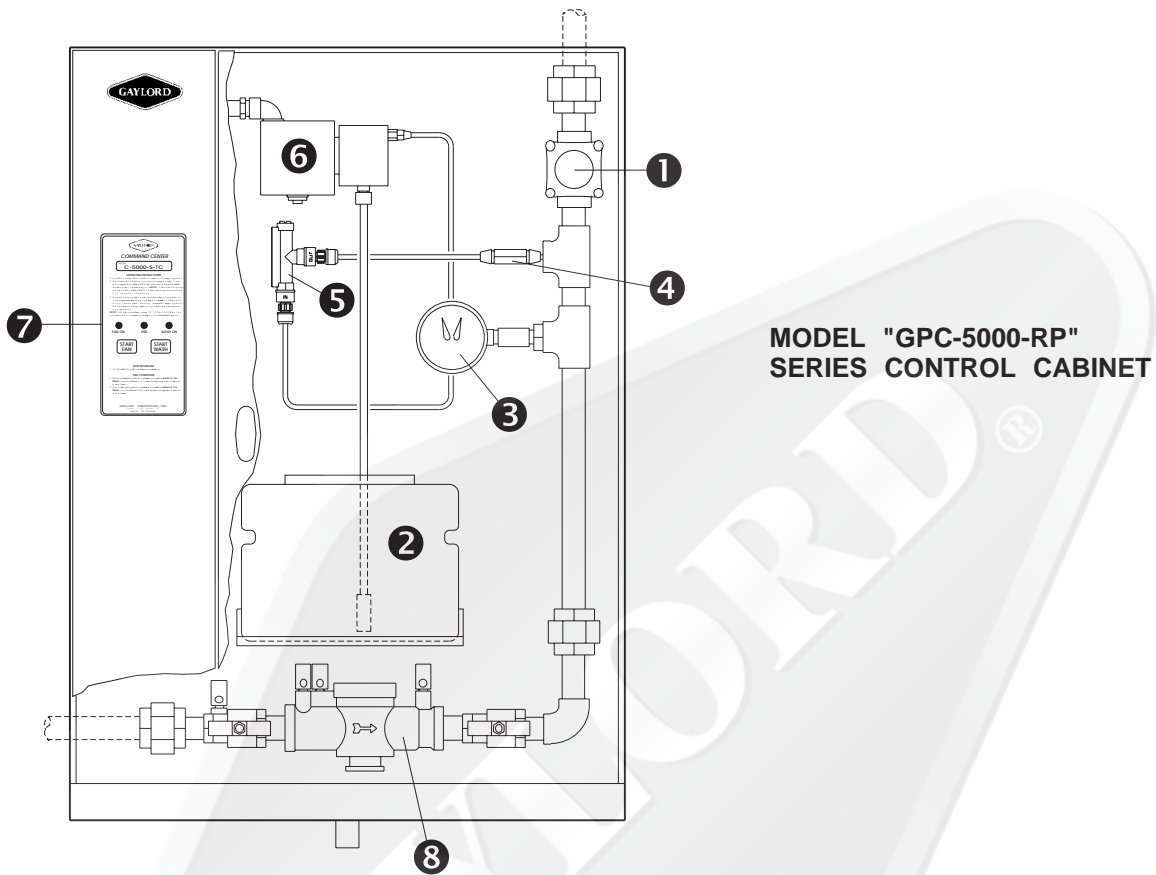


**MODEL "GPC-5000" SERIES  
CONTROL CABINET**

PC. NO.	DESCRIPTION	GAYLORD PART NO.	MFG. PART NO.
1.	Ball Valve .....		171N-(Specify Size)
2.	Solenoid Valve .....		8221- (Specify Size)
	A. Replacement Coil (120 Volt) .....	10156	238210032D
	(220 Volt) .....	10157	238210058D
	B. Solenoid Valve Repair Kit .....	14387	310-387
	..... Pipe Size: 1/2"	14388	310-388
	..... Pipe Size: 3/4"	14389	310-420
	..... Pipe Size: 1"	14390	310-506
	..... Pipe Size: 1-1/4"	14391	310-421
	..... Pipe Size: 1-1/2"		
3.	Detergent Tank (2 Gallon) .....	10221	T-3
4.	Pressure / Temperature Gauge .....	10175	HPT30L
5.	Brass Check Valve .....	10265	VF-038E
6.	FS-4 Series Flow Switch (Optional) .....	16892	122340
7.	Detergent Pump .....	10222	VF-100P 60B
	(120 Volt) .....	10223	VF-100P 60B1
	(220 Volt) .....		
8.	Command Center Model C-5000 .....		(Refer to Page 32)
9.	Vacuum Breaker .....		(Refer to Page 30)
	A. Vacuum Breaker Repair Kit .....		288A (Specify Size)
	.....		288A-RK (Specify Size)
10.	Water Check Valve .....		600 (Specify Size)
11.	3/8" Copper Tubing .....	13209	VF-060

## MODEL GPC-5000-RP SERIES CONTROL CABINET

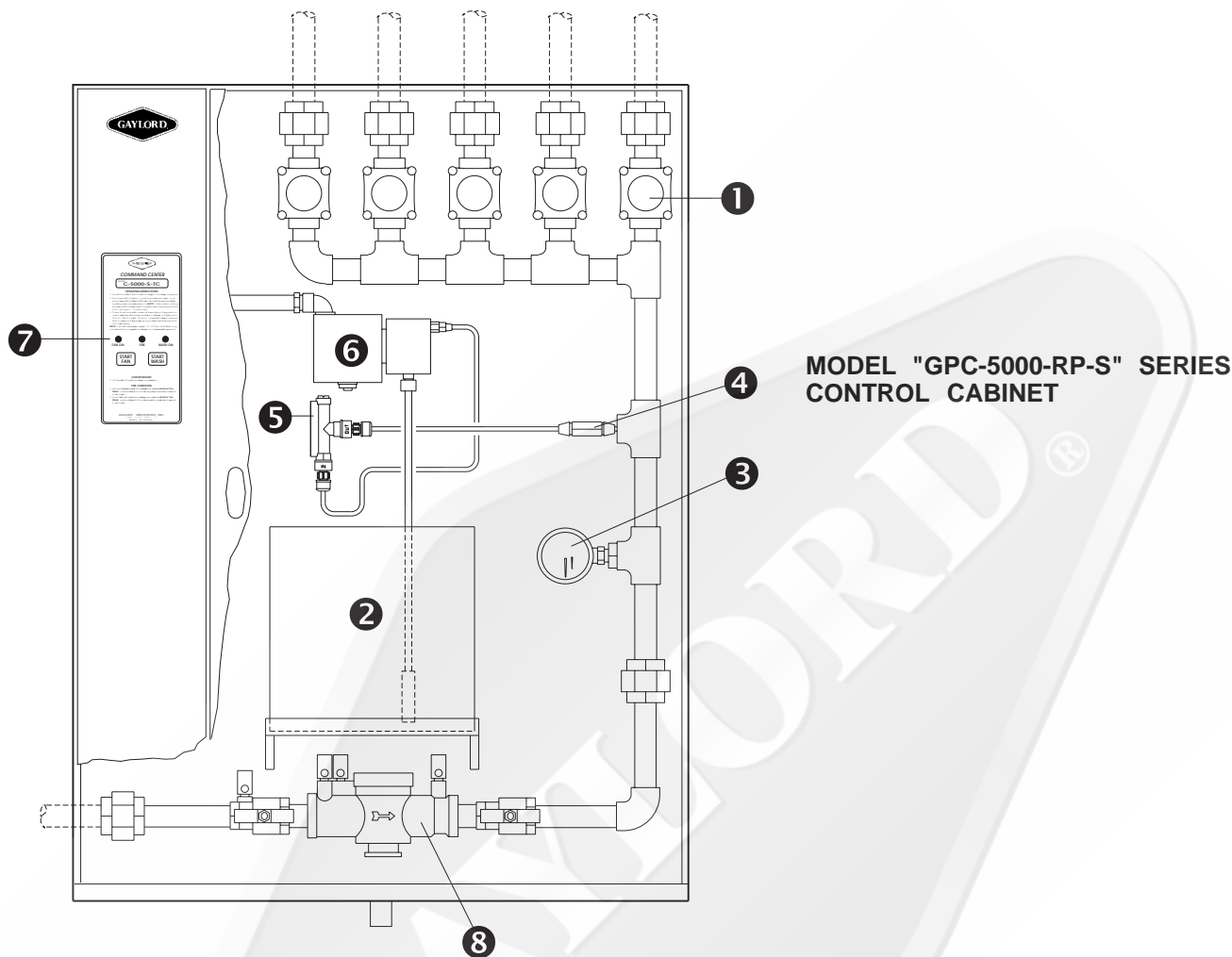
This Control Cabinet Is Used When A Reduced Pressure Principle Device Backflow Preventor Is Required.



PC. NO.	DESCRIPTION	GAYLORD PART NO.	MFG. PART NO.
1.	Solenoid Valve .....		171N- (Specify Size)
	A. Replacement Coil (120 Volt) .....	10156	238210032D
	(220 Volt) .....	10157	238210058D
	B. Solenoid Valve Repair Kit ..... Pipe Size: 1/2"	14387	310-387
	..... Pipe Size: 3/4"	14388	310-388
	..... Pipe Size: 1"	14389	310-420
	..... Pipe Size: 1-1/4"	14390	310-506
	..... Pipe Size: 1-1/2"	14391	310-421
2.	Detergent Tank (2 Gallon) .....	10221	T-3
3.	Pressure / Temperature Gauge .....	10175	HPT30L
4.	Brass Check Valve .....	10264	VF-038D
5.	FS-4 Series Flow Switch (Optional) .....	16892	122340
6.	Detergent Pump ..... (120 Volt)	10222	VF-100P 60B
	..... (220 Volt)	10223	VF-100P 60B1
	.....		(Refer to Page 32)
7.	Command Center Model C-5000 .....		(Refer to Page 30)
8.	Backflow Preventor "RP" Device Type .....		009-QT(Specify Size)

## MODEL GPC-5000-RP-S SERIES CONTROL CABINET

This Control Cabinet Is Used When Ventilators Are Washed In Sequence Groups.

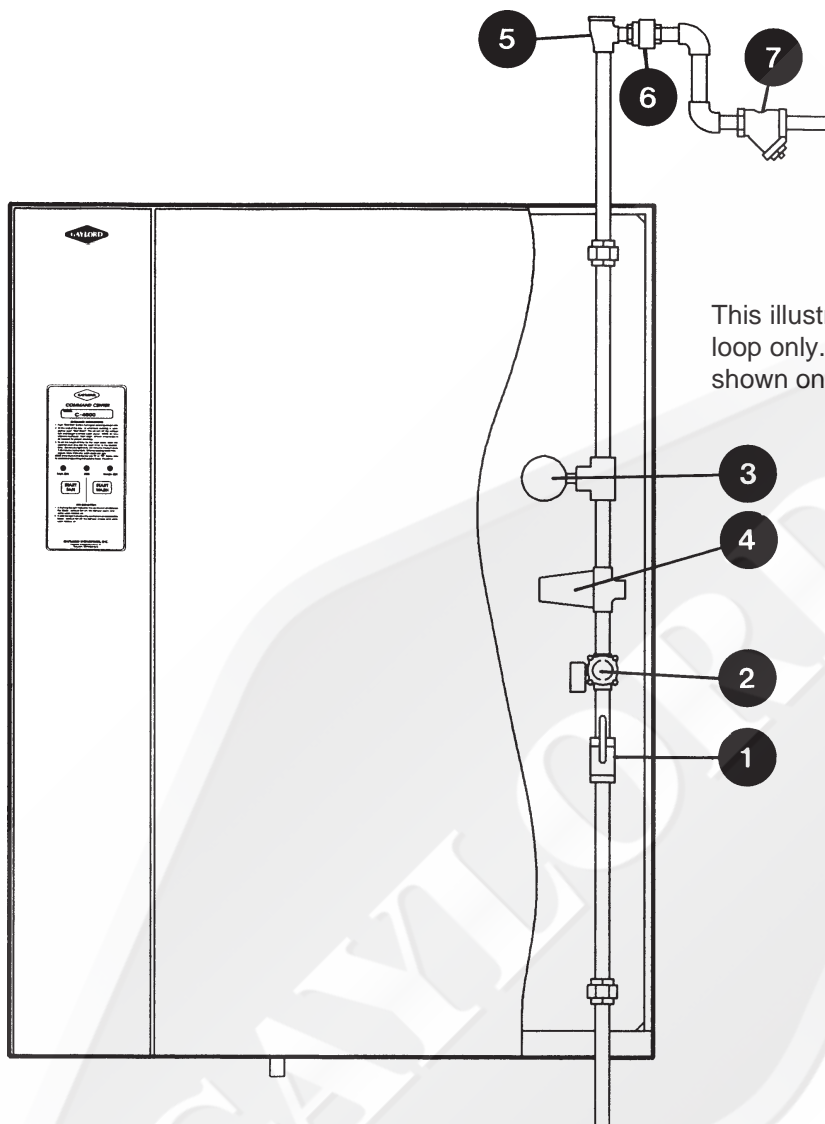


<b>PC. NO.</b>	<b>DESCRIPTION</b>	<b>GAYLORD PART NO.</b>	<b>MFG. PART NO.</b>
1.	Solenoid Valve .....		171N-(Specify Size)
	A. Replacement Coil (120 Volt) .....	10156	238210032D
	(220 Volt) .....	10157	238210058D
	B. Solenoid Valve Repair Kit ..... Pipe Size: 1/2"	14387	310-387
	..... Pipe Size: 3/4"	14388	310-388
	..... Pipe Size: 1"	14389	310-420
	..... Pipe Size: 1-1/4"	14390	310-506
	..... Pipe Size: 1-1/2"	14391	310-421
2.	Detergent Tank (2 Gallon) .....	10221	T-3
3.	Pressure / Temperature Gauge .....	10175	HPT30L
4.	Brass Check Valve .....	10264	VF-038D
5.	FS-4 Series Flow Switch (Optional) .....	16892	122340
6.	Detergent Pump ..... (120 Volt)	10222	VF-100P 60B
	..... (220 Volt)	10223	VF-100P 60B1
	.....		(Refer to Page 32)
7.	Command Center Model C-5000 .....		(Refer to Page 30)
8.	Backflow Preventor "RP" Device Type .....		009-QT(Specify Size)



# MODEL GPC-5000-CM SERIES CONTROL CABINET

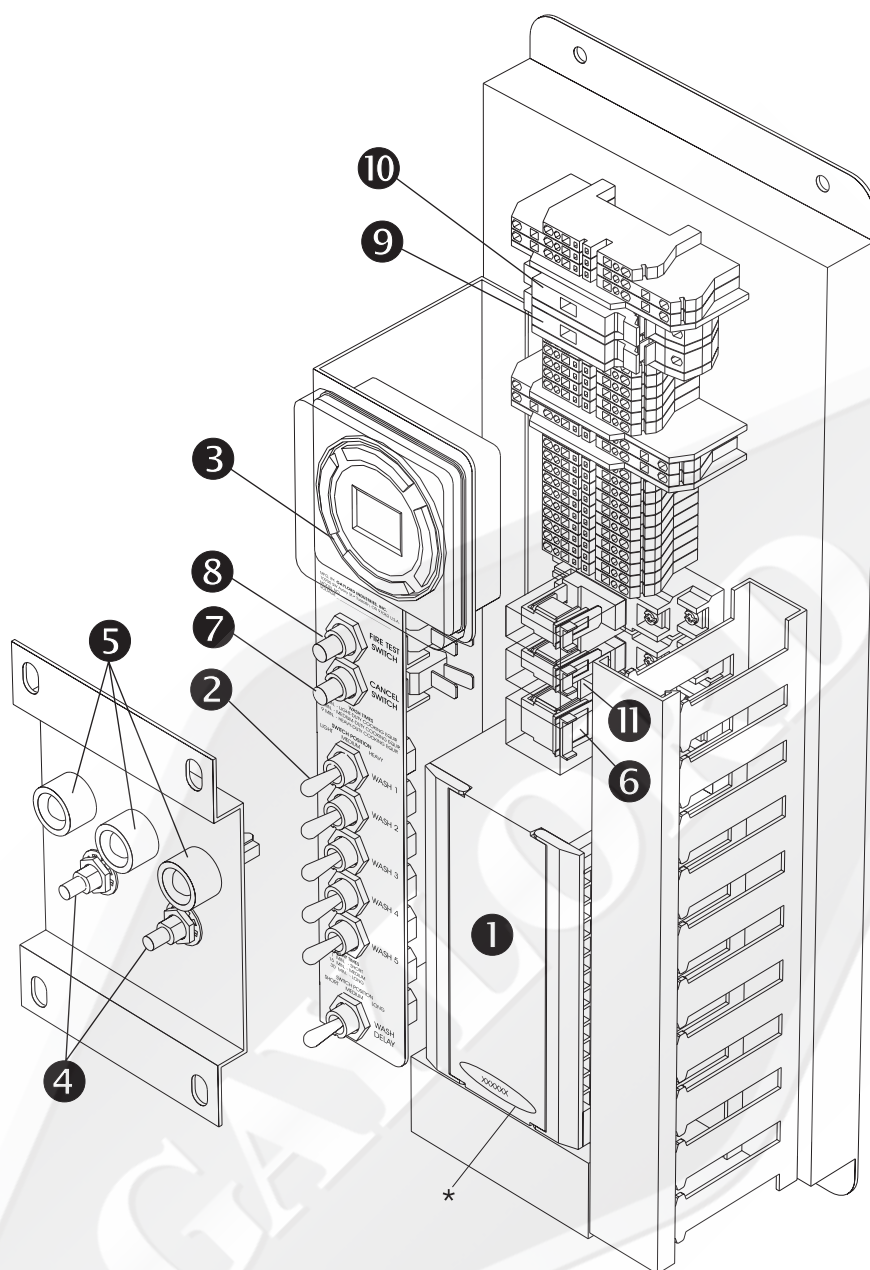
WITH OPTIONAL CONTINUOUS COLD WATER MIST



This illustration shows the cold water mist loop only. Parts for the hot water loop are shown on pages 26, 27 and 28.

PC. NO.	DESCRIPTION	GAYLORD PART NO.	MFG. PART NO.
1.	Ball Valve .....		171N-1/2"
2.	Solenoid Valve .....	10135	8210G2
	A. Replacement Coil (120 Volt) .....	10156	238210032D
	(220 Volt) .....	10157	238210058D
	B. Solenoid Valve Repair Kit ..... Pipe Size: 1/2"	14387	310-387
3.	Pressure Gauge .....	10276	1005 H 02L
4.	Pressure Reducing Valve .....	10924	25AUB
5.	Vacuum Breaker .....		288A (Specify Size)
	A. Vacuum Breaker Repair Kit .....		288A-RK (Specify Size)
6.	Water Check Valve .....		600 (Specify Size)
7.	Line Strainer .....		AT(Specify Size)

# MODEL GPC-5000 SERIES CONTROL



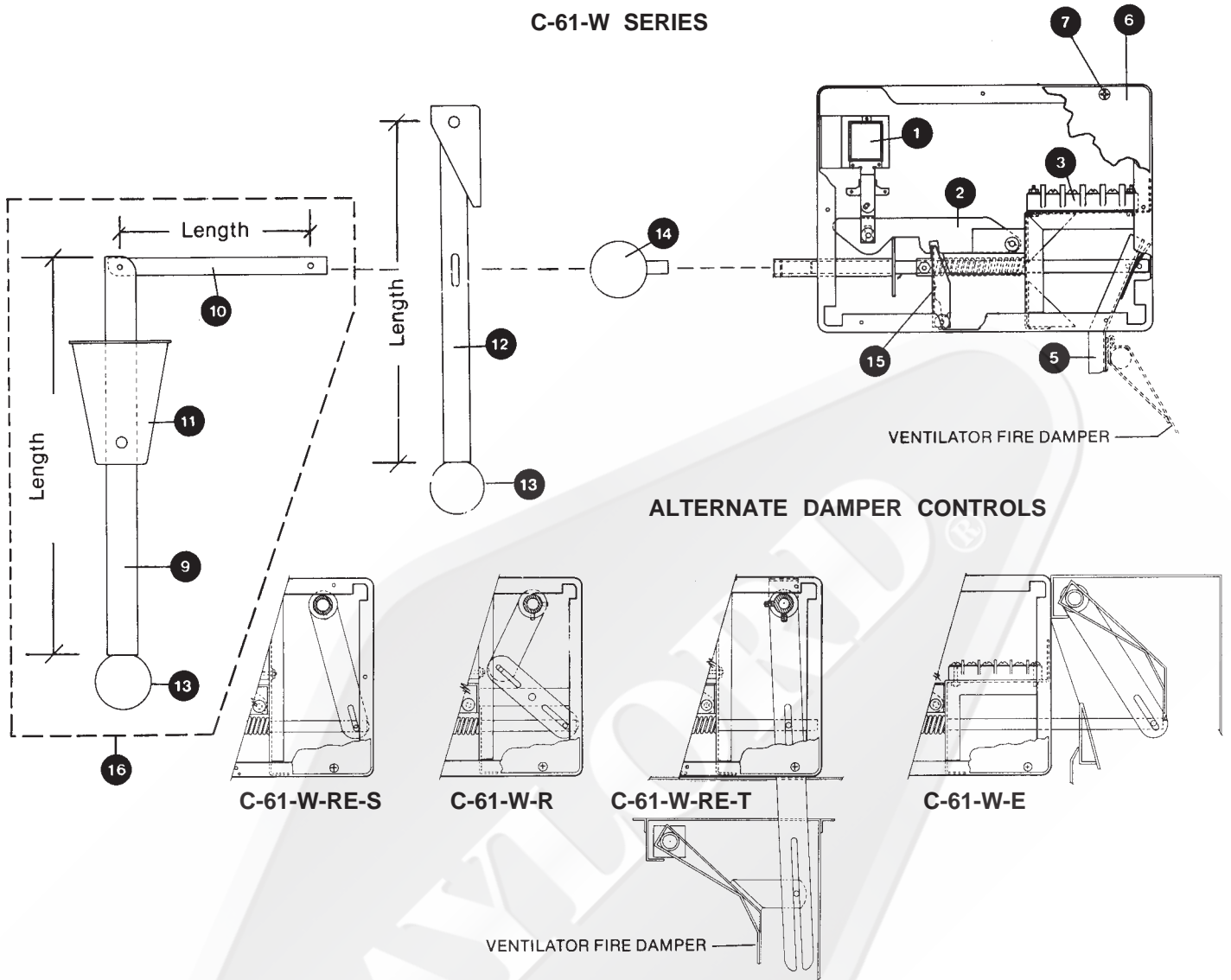
PC. NO.	DESCRIPTION	GAYLORD PART NO.	MFG. PART NO.
1.	Programmable Logic Controller (Specify) .....	16891 or	1761-L32AWA
	.....	16890	1761-L16AWA
2.	SPDT Toggle Switch .....	16900	2FC53-73TABS
3.	Time Clock .....	16899	DIGI20E-120V
4.	Start/Stop Switch .....	10035	E13-00M
5.	Indicator Lights .....	10835	93F3539/1050QA4
6.	DPDT Relay .....	10283	RH2BU-120VAC
7.	Cancel Switch .....	10010	3832510LB
8.	Fire Test Switch .....	16894	3832510LR
9.	2 Amp Fuse .....	16821	BUSSMAN GMA 2A
10.	4 Amp Fuse .....	16822	GDB4A
11.	SPDT Relay .....	11399	RH1BU-AC120V

\* Program number needed when ordering Logic Controller



# DAMPER CONTROL SWITCH

## C-61-W SERIES

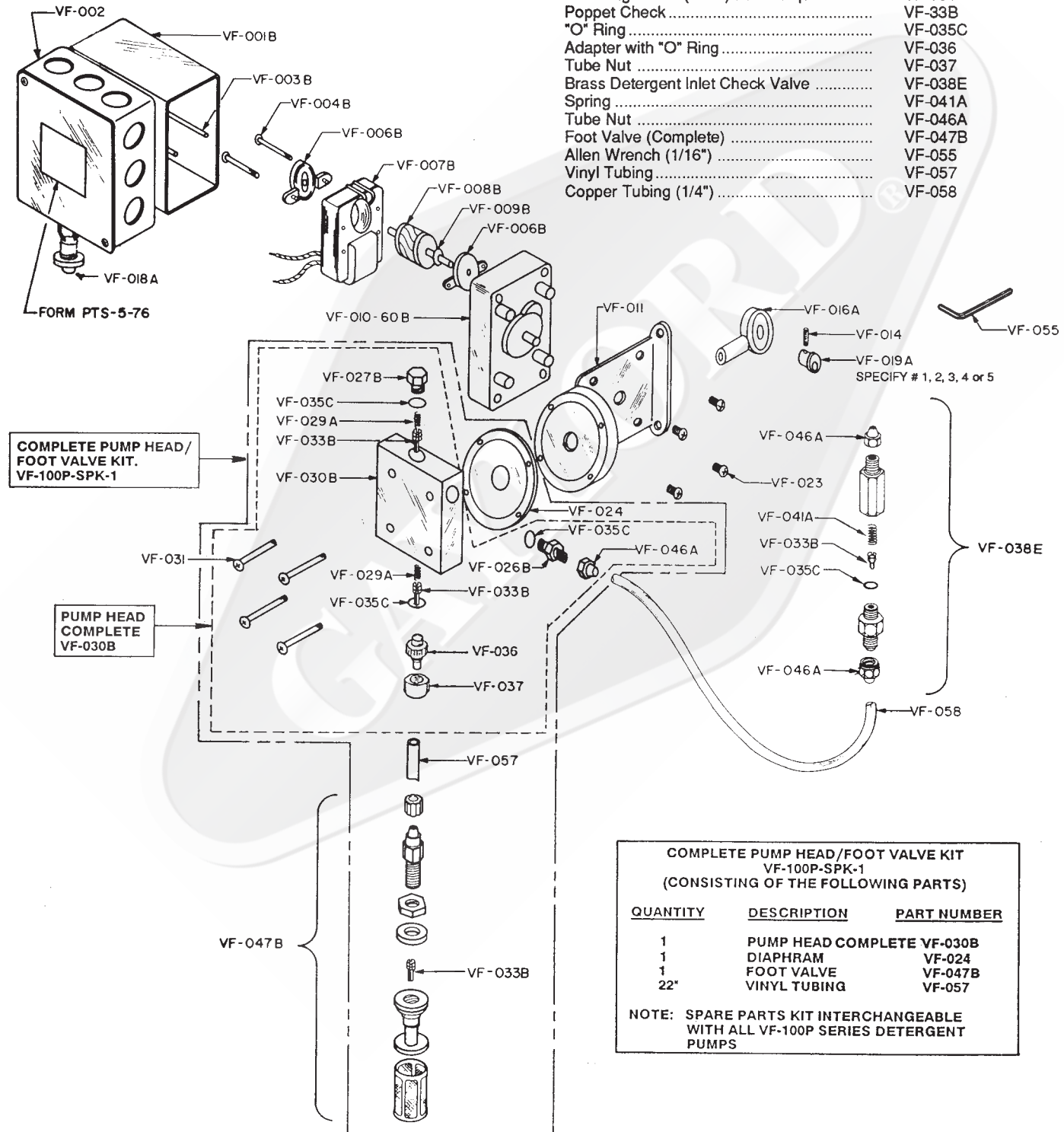


PC. NO.	DESCRIPTION	GAYLORD PART NO.	MFG. PART NUMBER
1	Solenoid complete with plunger, linkage and pins (115 volt). . . . .	10006	8710
	Solenoid complete with plunger, linkage and pins (220 volt). . . . .	11328	8710-1
2	Trigger (with pin). . . . .	12681	TR C-61
3	Terminal Block. . . . .	10002	304F2
4	OMITTED. . . . .		
5	Damper Arm. . . . .	10008	C-61PC25
6	Lid. . . . .	10012	LC-61
7	Lid Screws #8. . . . .	10022	TC8200.375TP125
8	Rod Springs (for ventilators up to 6' long, colored red). . . . .	10014	RNS-PC2
	Rod Springs (for ventilators 6'-7" to 12'-6" long). . . . .	10029	SNS-PC23
	Rod Springs (for ventilators 12'-7" to 16'-0" long). . . . .	10009	DS
9	SH Handles with pin. . . . .	10020	(Specify Length)
10	SH Extension Linkage with pins. . . . .	10017-10019	(Specify Length)
11	SH Bracket (complete with mounting bolts). . . . .	10016	SH BR
12	L Handle. . . . .	10011	(Specify Length)
13	Red Reset Ball w/ female thread. . . . .	10004	55
14	Red Reset Ball w/stud. . . . .	10003	44AC
15	Trigger Catch. . . . .	12682	TRC C-61
16	SH Handle Assembly (complete) . . . . .	10021	SH WL

# DETERGENT PUMP

## MODEL NUMBER VF-100P-60B

ITEM.	PART NUMBER	ITEM	PART NUMBER
Motor Cover .....	VF-001B	Yoke and Bearing Assembly .....	VF-016A
Electrical "J" Box .....	VF-002	Push Button Test Switch .....	VF-018A
Cover Mounting Screws .....	VF-003B	Cam .....	VF-019A
Motor Mounting Screws .....	VF-004B	SPECIFY CAM #1, 2, 3 or 4	
Armature Bearing .....	VF-006B	Screw - Four Required .....	VF-023
Coil (115 Volt) .....	VF-007B	Diaphragm .....	VF-024
Armature .....	VF-008B	Brass Outlet .....	VF-026B
Armature Spacer .....	VF-009B	Top Cap .....	VF-027B
Gear Box Assembly .....	VF-010-60B	Spring .....	VF-029A
Bracket .....	VF-011	* Pump Head (Complete with all fittings) .....	VF-030B
Set Screw .....	VF-014	Complete Pump Head/Foot Valve Kit .....	VF-100P-SPK-1
		Mounting Screw (head) Four Required .....	VF-031
		Poppet Check .....	VF-033B
		"O" Ring .....	VF-035C
		Adapter with "O" Ring .....	VF-036
		Tube Nut .....	VF-037
		Brass Detergent Inlet Check Valve .....	VF-038E
		Spring .....	VF-041A
		Tube Nut .....	VF-046A
		Foot Valve (Complete) .....	VF-047B
		Allen Wrench (1/16") .....	VF-055
		Vinyl Tubing .....	VF-057
		Copper Tubing (1/4") .....	VF-058



COMPLETE PUMP HEAD/FOOT VALVE KIT VF-100P-SPK-1 (CONSISTING OF THE FOLLOWING PARTS)		
QUANTITY	DESCRIPTION	PART NUMBER
1	PUMP HEAD COMPLETE	VF-030B
1	DIAPHRAM	VF-024
1	FOOT VALVE	VF-047B
22'	VINYL TUBING	VF-057

NOTE: SPARE PARTS KIT INTERCHANGEABLE  
WITH ALL VF-100P SERIES DETERGENT  
PUMPS

# MISCELLANEOUS VENTILATOR PARTS

ITEM NO.	PART NO.	DESCRIPTION	ILLUSTRATION
10303 10304 10305	GI-3 GI-6 GI-9	<b>SPRAY NOZZLES</b>  Single Head Double Head High Volume (Single Head)	
15330	AP100900226	<b>COLD WATER MIST NOZZLES</b>	
10308 10309	BPT-304 C-13	<b>VENTILATOR &amp; CONTROL CABINET DOOR HANDLES</b>  A. Handle Complete B. Tongue Only	
11333	H2-0576-034-1	<b>FLUSH CONTROL CABINET DOOR HANDLE (OPTIONAL)</b>	
10119	6-1801-00-0004	<b>LIGHT GLOBE - FROSTED</b>  Kason	
13211 13210 10111 10112	C73-T-87-SS C73-T-SS-20 C73-T-SS-30 C73-T-SS-40	<b>LIGHT LENS &amp; FRAME</b>  12" X 12" Recessed Light Lens & Retainer 2 FT. Recessed Light Lens & Retainer 3 FT. Recessed Light Lens & Retainer 4 Ft. Recessed Light Lens & Retainer	
11930 15657  11928 15656	GL/CA350 1E2B2-BJR-17 350  GL/CA280 1E2B2-BJR-17 280	<b>EXHAUST DUCT THERMOSTATS</b> <b>"CG" Series Ventilator</b> 6" Length 350°F 12" Length 350°F <b>"RG" Series Ventilator</b> 6" Length 280°F 12" Length 280°F	
10321 10323	165FUSELK 280FUSELK	<b>SUPPLY DUCT FIRE DAMPER FUSE LINK</b> <b>EXHAUST DUCT FIRE DAMPER FUSE LINK</b>	

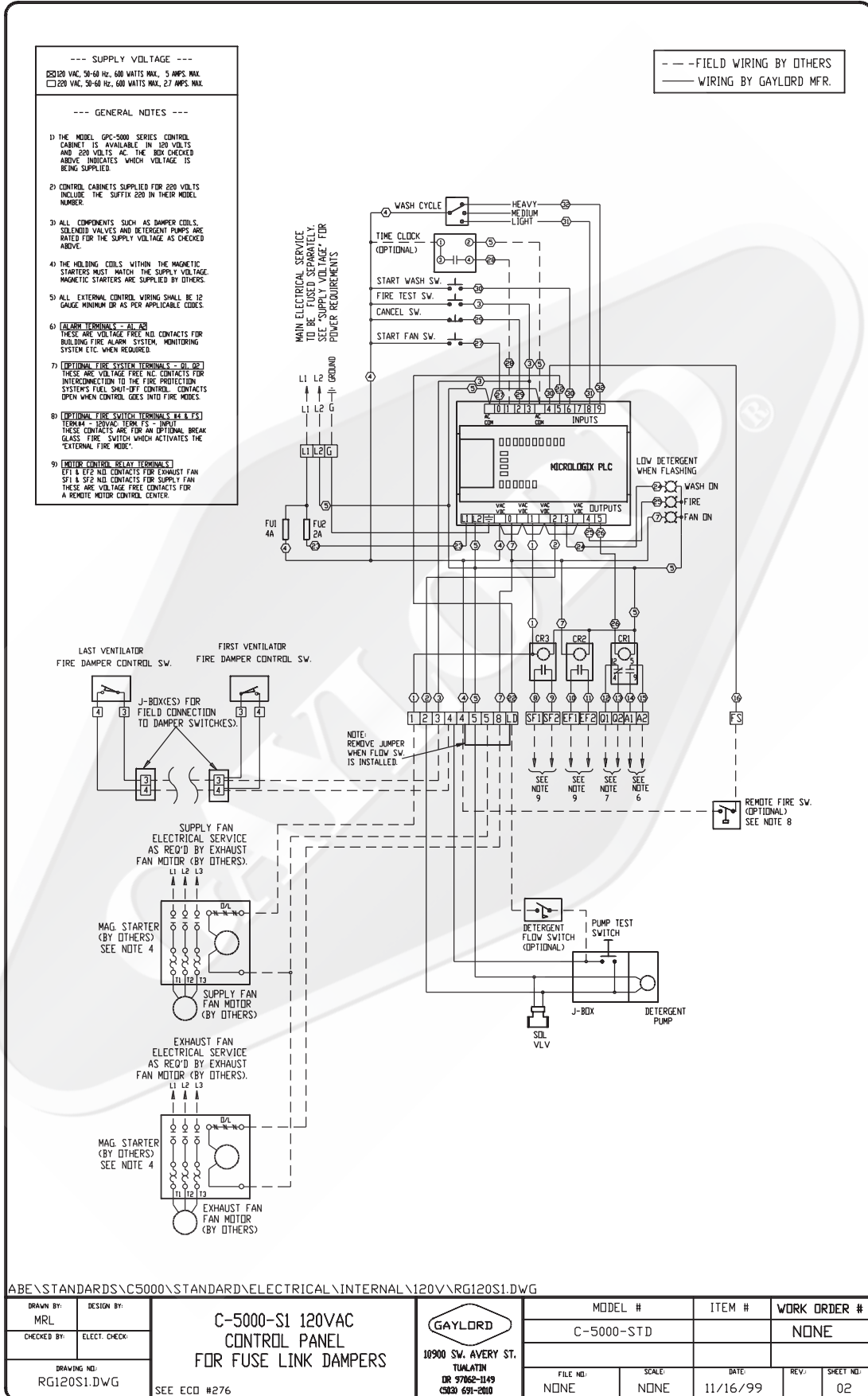
**WITH ELECTRIC FIRE DAMPER  
120 VOLT**





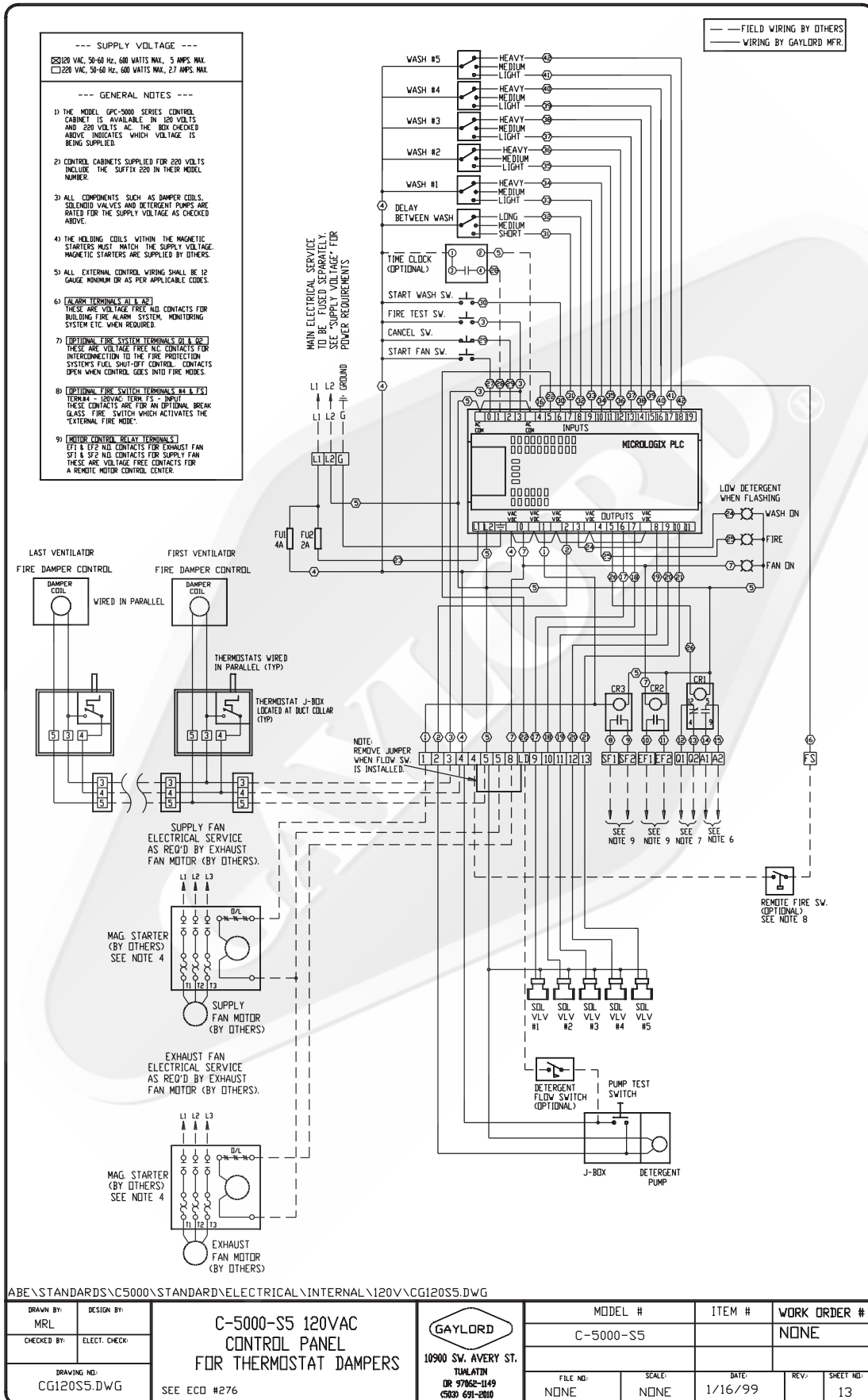
# WIRING DIAGRAM FOR GPC-5000

## WITH FUSE LINK FIRE DAMPER 120 VOLT



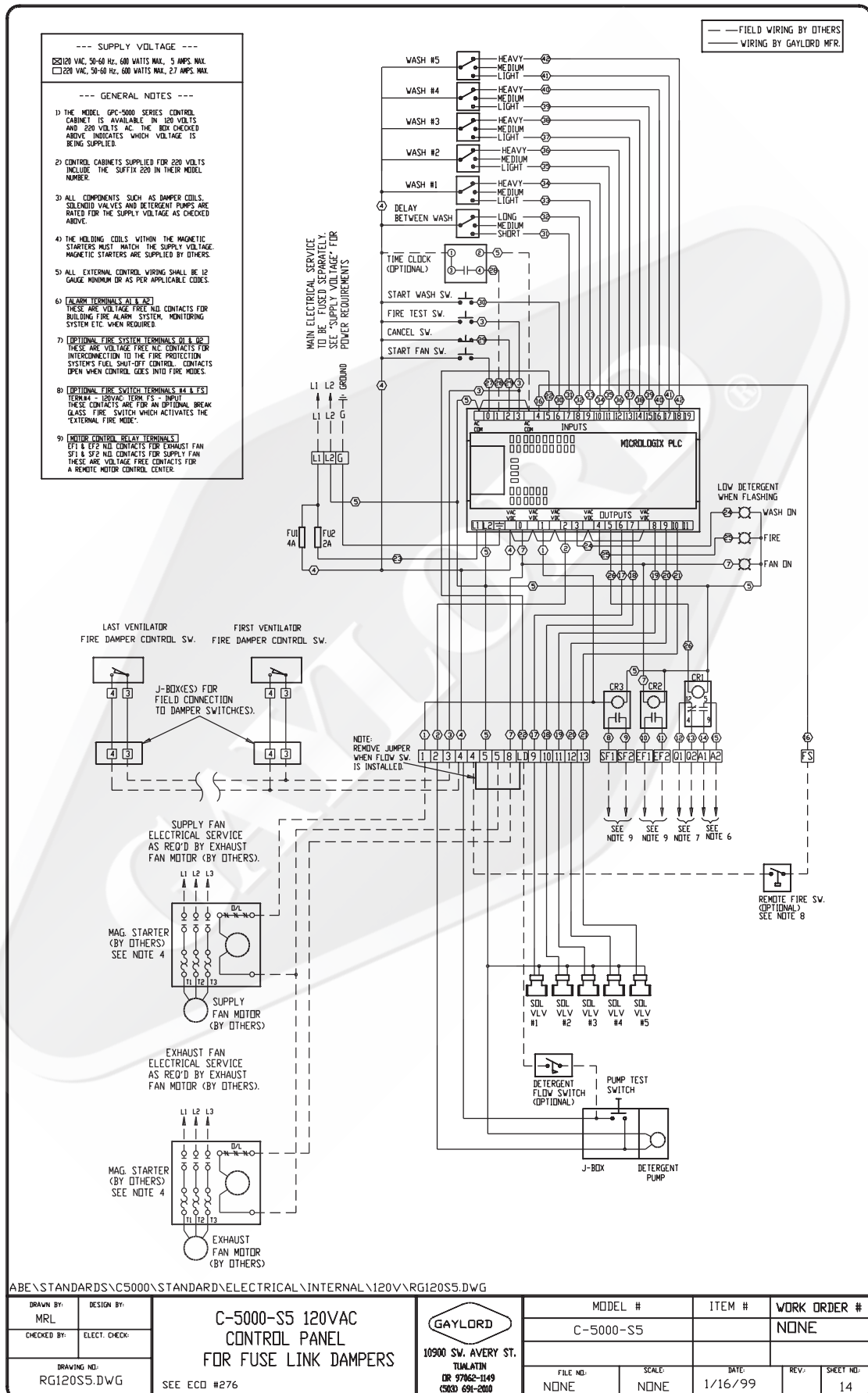
# WIRING DIAGRAM FOR GPC-5000-S5

## WITH ELECTRIC FIRE DAMPER 120 VOLT



# WIRING DIAGRAM FOR GPC-5000-S5

## WITH FUSE LINK FIRE DAMPER 120 VOLT



**WITH ELECTRIC FIRE DAMPER  
220 VOLT**





# WIRING DIAGRAM FOR GPC-5000

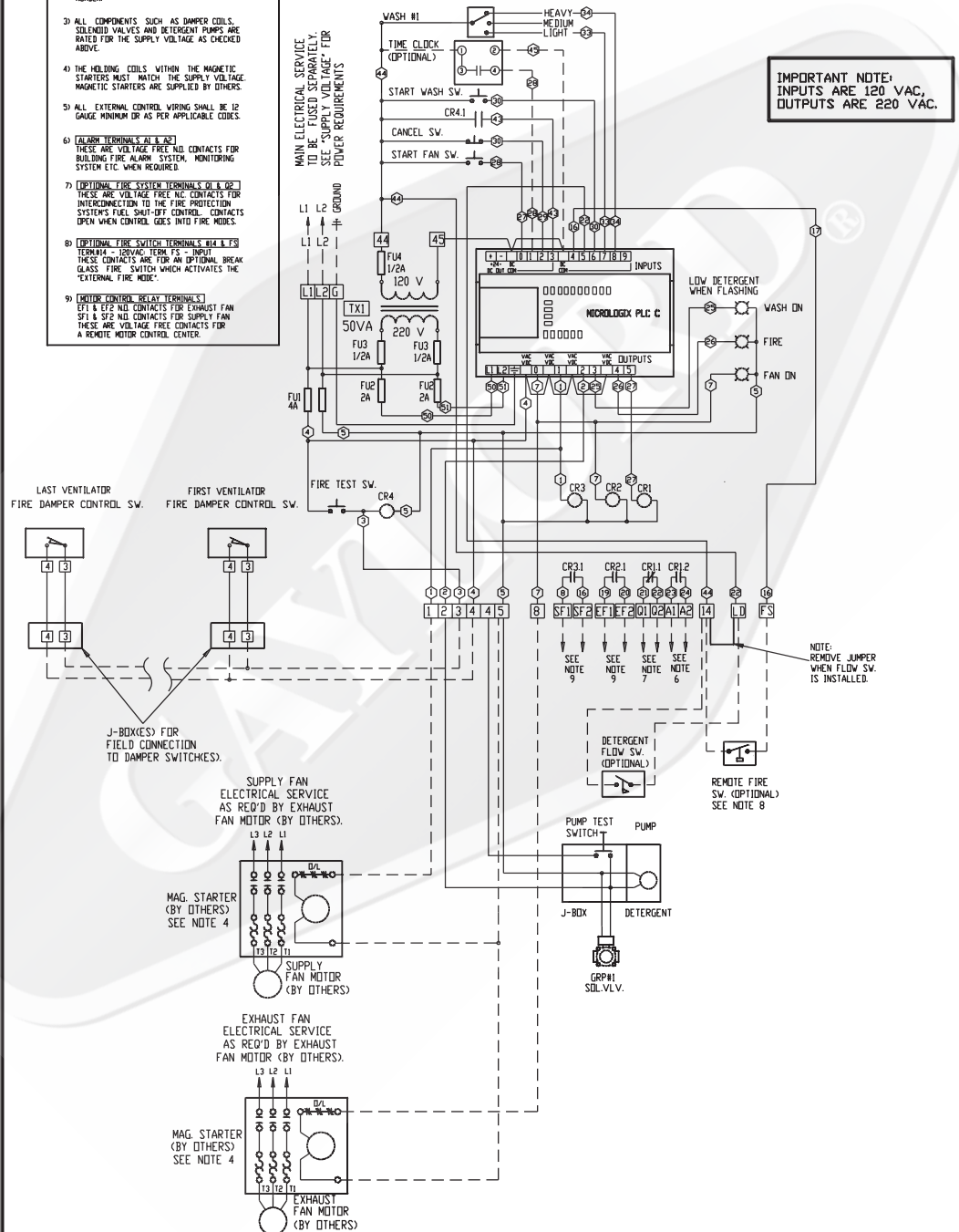
## WITH FUSE LINK FIRE DAMPER 220 VOLT

--- SUPPLY VOLTAGE ---  
□ 120 VAC, 50-60 Hz, 600 WATTS MAX., 5 AMPS. MAX.  
■ 220 VAC, 50-60 Hz, 600 WATTS MAX., 27 AMPS. MAX.

### --- GENERAL NOTES ---

- 1) THE MODEL GPC-5000 SERIES CONTROL CABINET IS AVAILABLE IN 120 VOLTS AND 220 VOLTS AC. THE BOX CHECKED ABOVE INDICATES WHICH VOLTAGE IS BEING SUPPLIED.
- 2) CONTROL CABINETS SUPPLIED FOR 220 VOLTS INCLUDE THE SUFFIX 220 IN THEIR MODEL NUMBER.
- 3) ALL COMPONENTS SUCH AS DAMPER COILS, SOLENOID VALVES AND DETERGENT PUMPS ARE RATED FOR THE SUPPLY VOLTAGE AS CHECKED ABOVE.
- 4) THE HOLDING COILS WITHIN THE MAGNETIC STARTERS MUST MATCH THE SUPPLY VOLTAGE. MAGNETIC STARTERS ARE SUPPLIED BY OTHERS.
- 5) ALL EXTERNAL CONTROL WIRING SHALL BE 12 GAUGE MINIMUM OR AS PER APPLICABLE CODES.
- 6) **ALARM TERMINALS A1 & A2**  
THESE ARE VOLTAGE FREE NO. CONTACTS FOR BUILDING FIRE ALARM SYSTEM, MONITORING SYSTEM ETC. WHEN REQUIRED.
- 7) **OPTIONAL FIRE SYSTEM TERMINALS D1 & D2**  
THESE ARE VOLTAGE FREE NO. CONTACTS FOR INTERCONNECTION TO THE FIRE PROTECTION SYSTEMS FUEL SHUT-OFF CONTROL, CONTACTS OPEN WHEN CONTROL GOES INTO FIRE MODES.
- 8) **OPTIONAL FIRE SWITCH TERMINALS S1 & S2**  
TERMINALS - 120VAC - INPUT  
THESE CONTACTS ARE FOR AN OPTIONAL BREAK GLASS FIRE SWITCH WHICH ACTIVATES THE EXTERNAL FIRE MODE.
- 9) **CONTROL CONTROL BREAK TERMINALS**  
S1 & S2 NO. CONTACTS FOR EXHAUST FAN  
S1 & S2 NO. CONTACTS FOR SUPPLY FAN  
THESE ARE VOLTAGE FREE CONTACTS FOR A REMOTE MOTOR CONTROL CENTER.

--- FIELD WIRING BY OTHERS ---  
--- WIRING BY GAYLORD MFR. ---



ABE\STANDARDS\C5000\STANDARD\ELECTRICAL\INTERNAL\220V\RG220S1.DWG

DRAWN BY: MRL	DESIGN BY:	C-5000-S1 220VAC CONTROL PANEL FOR FUSE LINK DAMPER	GAYLORD 10900 SW. AVERY ST. TULALIN OR 97062-1149 503 691-2800	MODEL #	ITEM #	WORK ORDER #
CHECKED BY:	ELECT. CHECK:			C-5000-220-S1		NONE
DRAWING NO: RG220S1.DWG				FILE NO: NONE	SCALE:	DATE: 03/27/00
						REV: REV
						SHEET NO: 32

# WIRING DIAGRAM FOR GPC-5000-S5

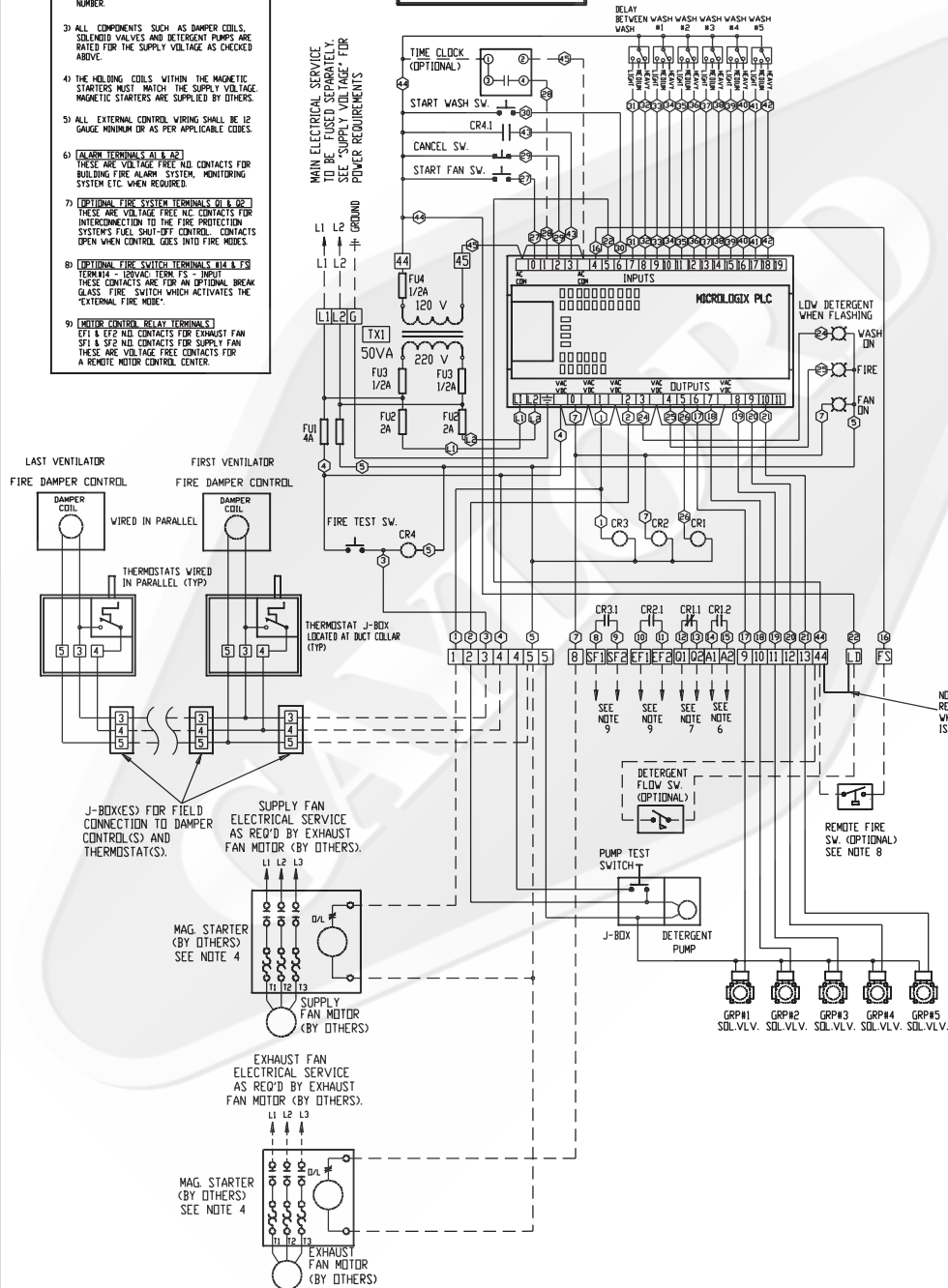
## WITH ELECTRIC FIRE DAMPER 220 VOLT

--- SUPPLY VOLTAGE ---  
 □ 120 VAC, 50-60 Hz, 600 WATTS MAX, 5 AMPS MAX.  
 □ 220 VAC, 50-60 Hz, 600 WATTS MAX, 2.7 AMPS MAX.

### --- GENERAL NOTES ---

- 1) THE MODEL GPC-5000 SERIES CONTROL CABINET IS AVAILABLE IN 120 VOLTS AND 220 VOLTS AC. THE BOX CHECKED ABOVE INDICATES WHICH VOLTAGE IS BEING SUPPLIED.
- 2) CONTROL CABINETS SUPPLIED FOR 220 VOLTS INCLUDE THE SUFFIX 220 IN THEIR MODEL NUMBER.
- 3) ALL COMPONENTS SUCH AS DAMPER COILS, SOLENOID VALVES AND DETEGENT PUMPS ARE RATED FOR THE SUPPLY VOLTAGE AS CHECKED ABOVE.
- 4) THE HOLDING COILS WITHIN THE MAGNETIC STARTERS MUST MATCH THE SUPPLY VOLTAGE. MAGNETIC STARTERS ARE SUPPLIED BY OTHERS.
- 5) ALL EXTERNAL CONTROL WIRING SHALL BE 12 GAUGE MINIMUM OR AS PER APPLICABLE CODES.
- 6) ALARM TERMINALS A1 & A2 THESE ARE VOLTAGE FREE NO CONTACTS FOR BUILDING FIRE ALARM SYSTEM, MONITORING SYSTEM ETC. WHEN REQUIRED.
- 7) OPTIONAL FIRE SYSTEM TERMINALS B1 & B2 THESE ARE VOLTAGE FREE NO CONTACTS FOR INTERCONNECTION TO THE FIRE PROTECTION SYSTEM'S FUEL SHUT-OFF CONTROL. CONTACTS OPEN WHEN CONTROL GOES INTO FIRE MODES.
- 8) OPTIONAL FIRE SWITCH TERMINALS B4 & B5 TERMINAL B4 - 120VAC FORM FS - INPUT THESE CONTACTS ARE FOR AN OPTIONAL BREAK GLASS FIRE SWITCH WHICH ACTIVATES THE "EXTERNAL FIRE MODE".
- 9) MOTOR CONTROL DELAY TERMINALS E1 & E2 NO CONTACTS FOR EXHAUST FAN SUPPLY FAN. THESE ARE VOLTAGE FREE CONTACTS FOR A REMOTE MOTOR CONTROL CENTER.

IMPORTANT NOTE:  
 INPUTS ARE 120 VAC,  
 OUTPUTS ARE 220 VAC.



ABE\STANDARDS\C5000\STANDARD\ELECTRICAL\INTERNAL\220V\CG220S5.DWG

REV. 2 8/24/00 MRL

DRAWN BY: MRL	DESIGN BY:
CHECKED BY:	ELECT. CHECK:
DRAWING NO: CG220S5.DWG	

C-5000-S5 220VAC  
 CONTROL PANEL  
 FOR THERMOSTAT DAMPER

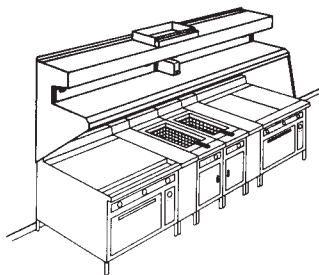
GAYLORD  
 10900 SW. AVERY ST.  
 TUALATIN  
 OR 97062-1149  
 (503) 691-2010

MODEL # C-5000-220-S5	ITEM #	WORK ORDER # NONE
FILE NO. NONE	SCALE:	DATE: 08/15/00
	REV.: 02	SHEET NO.: 43

**WITH FUSE LINK FIRE DAMPER  
220 VOLT**

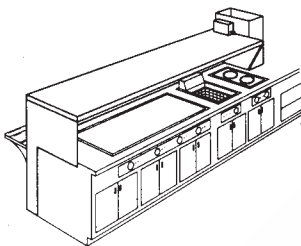


## STANDARD VENTILATOR MODELS



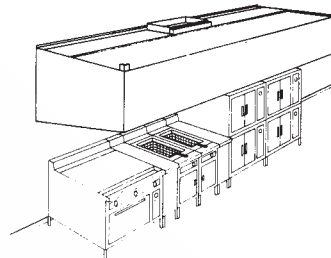
**MODEL "AB"**

APPLICATION — Backsheft style for all types of counter height equipment.



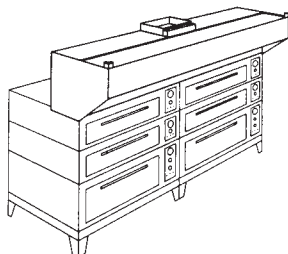
**MODEL "C", "E", & "CE"**

APPLICATION — Pass-over style for all types of counter height equipment. Not available in "RG" Series. "C" & "E" available in "CG" Series only.



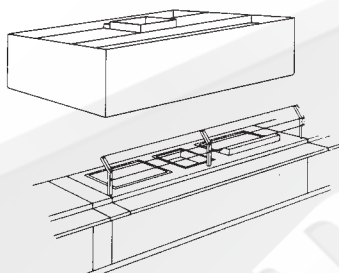
**MODEL "BDL"**

APPLICATION — Wall mounted canopy style for all types of equipment.



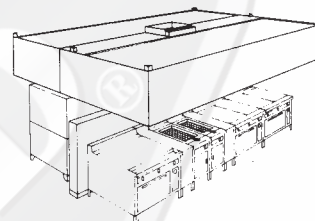
**MODEL "BDL-O"**

APPLICATION — Eyebrow canopy style for direct mounting to all types of ovens such as roast, bake and reel types.



**MODEL "BDL-DS-CL"**

APPLICATION — Used for cafeteria lines or any other single line island arrangement.



**MODEL "BDL-DS"**

APPLICATION — For all island style cooking arrangements.

## STANDARD MAKE-UP AIR OPTIONS

The make-up air options shown below are available on all BDL Series Ventilators.

### MODEL "MAW" SERIES FRONT FACE DISCHARGE

This method of introducing make-up air into the kitchen is flexible and has many advantages. Make-up air is discharged through stainless steel perforated panels as illustrated (MAW Series) or optional registers. Typical supply volume is 80% of the exhaust or more, depending on air balance desired. Supply air temperatures should range from 60 to 65°F (16 to 18°C), but may be as low as 50°F (10°C) depending on air volume, distribution, and internal heat load.

### MODEL "MAP" SERIES DOWN DISCHARGE

This method of introducing air into the kitchen area is typically used when "spot cooling" of the kitchen staff is desired to help relieve the effects of severe radiant heat generated from equipment such as charbroilers. Discharge velocities must be carefully engineered to avoid air turbulence at the cooking surface, discomfort to personnel and the cooling of foods. The amount of supply air introduced may be up to 80% of exhaust depending upon the type of cooking equipment involved, and the air temperature should be 65° F (18°C) or higher.

### MODEL "MAI" SERIES INTERNAL DISCHARGE

This method of introducing air into the hood is typically referred to as the "short circuit" method. This design has very limited applications and the amount of supply air able to be introduced varies considerably with the type of cooking equipment. This air may be untempered air in most areas depending upon climatic conditions and the type of cooking equipment. The difference between the quantity of air being introduced and the amount of air being exhausted must be supplied through a traditional make-up air system.



# METRIC CONVERSION CHART

DIMENSIONS (Feet and Inches)		
TO CONVERT	TO	MULTIPLY BY
in .....	mm .....	25.4
in .....	cm .....	2.54
mm .....	in .....	0.03937
cm .....	in .....	0.3937
ft .....	cm .....	30.48
ft .....	m .....	0.3048
cm .....	ft .....	0.0328
m .....	ft .....	3.2808
STANDARD CONVERSIONS		
One meter =	10 dm	one in. = 25.40 mm
One meter =	100 cm	one ft. = 304.80 mm
One meter =	1000 mm	
AIR VELOCITY		
TO CONVERT	TO	MULTIPLY BY
FPM .....	m/s .....	0.00508
m/s .....	FPM .....	196.85
AIR VOLUME		
TO CONVERT	TO	MULTIPLY BY
CFM .....	m <sup>3</sup> /sec .....	0.000472
CFM .....	m <sup>3</sup> /min .....	0.02832
CFM .....	m <sup>3</sup> /hr .....	1.70
CFM .....	Ltrs/sec .....	0.472
m <sup>3</sup> /sec .....	CFM .....	2118.88
m <sup>3</sup> /min .....	CFM .....	35.31
m <sup>3</sup> /hr .....	CFM .....	0.5886
STATIC PRESSURE		
TO CONVERT	TO	MULTIPLY BY
in. W.G. ....	N/m <sup>2</sup> .....	248.84
N/m <sup>2</sup> .....	in. W.G. ....	0.004
STANDARD CONVERSIONS		
1.00" W.G. =	248.84 N/m <sup>2</sup>	
or 248.84	Pascals (Pa)	
or 2.49	Millibars	
1.33" W.G. =	331 N/m <sup>2</sup> or 331 Pa	
1.50" W.G. =	373 N/m <sup>2</sup> or 373 Pa	
1.65" W.G. =	411 N/m <sup>2</sup> or 411 Pa	
1.70" W.G. =	423 N/m <sup>2</sup> or 423 Pa	

WATER FLOW/VOLUME		
TO CONVERT	TO	MULTIPLY BY
U.S. ounce .....	Liters .....	0.2958
U.S. gal .....	Liters .....	3.785
Liters .....	U.S. gal .....	0.2642
GPM .....	L/s .....	0.0631
L/s .....	GPM .....	15.850
STANDARD CONVERSIONS		
one U.S. gal. ....	=	3.785 Liters
one Liter .....	=	0.2642 U.S. Gal.
one GPM/ft. ....	=	0.063 L/s/ft.
	or	0.207 L/s/m
one U.S. gal. ....	=	0.833 Imperial Gal.
one Imperial Gal. ....	=	4.546 Liters
WATER PRESSURE		
TO CONVERT	TO	MULTIPLY BY
psi .....	kg/m <sup>2</sup> .....	703.1
psi .....	kg/cm <sup>2</sup> .....	0.0703
kg/m <sup>2</sup> .....	psi .....	0.0014
kg/cm <sup>2</sup> .....	psi .....	14.223
STANDARD CONVERSIONS		
40 psi =	2.8 kg/cm <sup>2</sup>	80 psi = 5.6 kg/cm <sup>2</sup>
	= 275.8 Kpa	= 551.6 Kpa
	= 2.758 BAR	= 5.516 BAR
TEMPERATURE		
TO CONVERT	TO	USE FORMULA
° C .....	° F .....	° F = (° C • 1.8) + 32
° F .....	° C .....	° C = $\left(\frac{° F - 32}{1.8}\right)$
STANDARD CONVERSIONS		
140°F. to 180°F. =	60°C. to 82°C.	
WEIGHT		
TO CONVERT	TO	MULTIPLY BY
lbs. ....	N .....	4.448
lbs. ....	kg .....	0.4536
N .....	lbs .....	0.2248
kg .....	lbs .....	2.2046
PIPE SIZE		
U.S. STANDARD PIPE SIZES	STANDARD METRIC EQUIVALENT PIPE SIZE	
1/2" .....	=	15 mm
3/4" .....	=	20 mm
1" .....	=	25 mm
1-1/4" .....	=	32 mm
1-1/2" .....	=	40 mm
2" .....	=	50 mm

LEGEND					
in.	=	inches	Pa.	=	Pascals
ft.	=	feet	U.S. gal.	=	U.S. gallon
mm	=	millimeters	GPM	=	gallons per minute
cm	=	centimeters	L/s	=	liters per second
dm	=	decimeters	Kpa	=	1000 Pascals
CFM	=	cubic feet per minute	psi	=	pounds per square inch
m <sup>3</sup> /s	=	cubic meters per second	kg/m <sup>2</sup>	=	kilograms per square meter
L	=	Liters	° F.	=	degrees Fahrenheit
			FPM	=	feet per minute
			m/s	=	meters per second
			in. W.G.	=	inches water gauge
			N	=	Newtons
			N/m <sup>2</sup>	=	Newtons per square meter
			° C.	=	degrees Celsius
			BAR	=	one atmospheric pressure meter (1000 millibars = 14.7 psi)

**GAKLOORD®**

## THE GAYLORD WATER-WASH VENTILATOR LIMITED WARRANTY

April 2005

The Gaylord Ventilator and component parts furnished with The Gaylord Ventilator are warranted to be free from defects of material and workmanship under normal use when installed, operated and serviced in accordance with factory recommendation. Rubber and synthetic rubber parts such as "O" rings, diaphragms and poppet checks are perishable when caustic cleaning solutions are used and, therefore, are not covered by this warranty.

The Manufacturer's obligation under this warranty and any warranties implied by law shall be limited to repairing or replacing at its option any part of said equipment when either Gaylord Industries, Inc. or the Licensed Gaylord Manufacturer's examination shall disclose to its satisfaction to be thus defective, for a period of one (1) year from the date of original installation provided proper and acceptable evidence of such installation is recorded at the factory. GAYLORD INDUSTRIES, INC. AND THE LICENSED GAYLORD MANUFACTURER SHALL NOT BE RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM A BREACH OF THIS WARRANTY.

In the United States, the labor required to make repairs and replacements under this warranty shall be furnished by Gaylord Industries, Inc. or the Licensed Gaylord Manufacturer or its authorized representative. Such labor shall only be provided Mondays through Fridays during the hours between 8 a.m. and 4 p.m. Requests for repairs or replacement parts should be made to GAYLORD INDUSTRIES, 10900 SW Avery Street, Tualatin, Oregon 97062-1149.

Outside the United States, all replacement parts furnished under this warranty shall be F.O.B. Gaylord Industries, Tualatin, Oregon U.S.A. The owner shall pay the necessary freight delivery charges, and necessary labor for removal and installation of parts, and any tariffs, duties or taxes.

Component parts not manufactured by Gaylord Industries, Inc., such as electrical switches, solenoid coils, relays, etc., shall be warranted under the terms and conditions of the warranty published by the manufacturer of said component parts.

This warranty does not cover routine maintenance such as detergent replacement and inspection of the cleaning system as spelled out in The Gaylord Ventilator Technical Manual. This warranty also does not cover malfunctions or improper operation caused by inadequate hot water, low water pressure, fluctuating electrical power or power surges, waste stoppages, and improper exhaust fan operation.

This is the sole warranty with respect to the aforesaid items. NEITHER GAYLORD INDUSTRIES, INC. OR THE GAYLORD LICENSED MANUFACTURER OR ANY OTHER PARTY MAKES ANY OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORESAID OBLIGATIONS ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS AGREEMENT.



AN ILLINOIS TOOL WORKS COMPANY  
10900 S.W. AVERY STREET  
TUALATIN, OREGON 97062 U.S.A

LOCAL SERVICE AGENCY

[illegible]